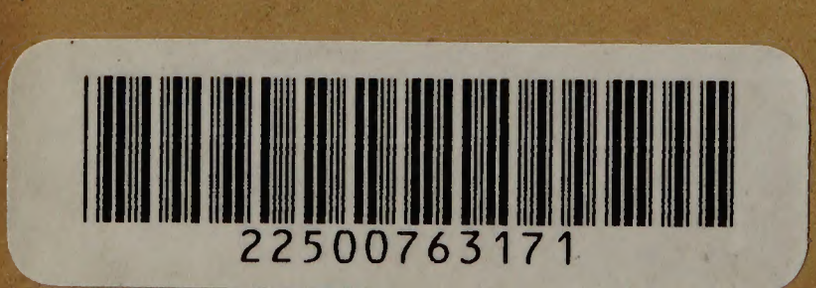
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THE

VETERINARIAN;

A

MONTHLY JOURNAL OF VETERINARY SCIENCE

FOR 1865.

VOL. XXXVIII—VOL. XI, FOURTH SERIES.

EDITED BY

PROFESSORS MORTON AND SIMONDS,

ASSISTED BY

PROFESSORS VARNELL, TUSON, & BROWN.

Ars Veterinaria post medicinam secunda est.—*Vegetius.*

LONDON:

PRINTED BY J. E. ADLARD, BARTHOLOMEW CLOSE.

PUBLISHED BY LONGMANS, GREEN, & CO.,

PATERNOSTER ROW.

33987

PRINTED BY
J. E. ADLARD, BARTHOLOMEW CLOSE.

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THE

VETERINARIAN.

VOL. XXXVIII. No. 445. JANUARY, 1865. Fourth Series. No. 121.

Communications and Cases.

TWO CASES OF FRACTURE OF THE PELVIC BONES OF THE HORSE.

By Professor VARNELL, of the Royal Veterinary College.

THE care necessary in forming a correct diagnosis of injuries to the bones of the pelvis of the horse is, to a certain extent, illustrated by the two following cases; a brief description of which may be not uninteresting to the student of veterinary medicine or the junior practitioner.

There can scarcely be a doubt that very often much anxiety is felt by the practitioner during the time he is making a *post-mortem* examination of a valuable horse, or other animal, lest the result should not prove to be in accordance with the opinion he had given, and upon which the animal had been destroyed. Doubtless, this is more acutely felt by those just entering into practice, as both their reputation and future prospects stand in greater danger of being damaged than do those of practitioners whom many years of successful practice have placed beyond the effects of an occasional mistake.

Besides, I am desirous of recording these cases because I think there are points in each worthy of notice even to the senior members of the profession. The particulars of the first case, together with the fractured bones, were given me by Mr. Hogben, M.R.C.V.S.; and at his request the specimen was laid before the members of the

Veterinary Medical Association; and although but little discussion followed, nevertheless some practical observations were made by several of the members. Mr. Hogben wrote to me as follows:

"*October*, 31, 1864.

"DEAR SIR,—Agreeable to your wish, I forward to you a brief history of the fractured pelvis I left with you a few days since.

"The mare from which the specimen was taken belonged to Mr. ——, butcher, Hythe. The cause of the injury is not precisely known; but it is supposed that the mare had fallen into a ditch which separated the field into which she had been turned from an adjoining one, as, after this time, she became very lame. This lameness was first noticed by her owner, when driving her on his rounds with meat.

"A farrier who resided in the neighbourhood first saw the mare, and said that, in his opinion, she was lame in the 'round bone.' For this supposed defect she was blistered, and afterwards turned out to grass, where she remained for about three months. During this time the mare not only did not improve, but became suddenly worse; and the farrier who had the charge of the case was greatly puzzled both as to its nature and its seat.

"My attention being now directed to the case, I was requested to give an opinion on the nature of the lameness, and the probable result. After I had carefully examined the mare, I came to the conclusion that the pelvis was fractured, and that there was no chance of recovery; indeed, I advised the owner to have her destroyed, which was immediately carried into effect.

"I remain, &c.

"To Professor VARNELL."

With regard to this case, the ischium and pubis of the left os innominatum were found to be fractured—the former just behind the acetabulum, in a slightly oblique direction, and the latter immediately in front of that cavity. On the ends of these segments, near to the fractures, a variable amount of newly deposited osseous matter existed, thus indicating that the bones had been temporarily united the one to the other, and that they had subsequently become separated. If this was the case—and of it I have no doubt whatever—displacement of the fractured bones did not in the first instance take place. Had the mare, therefore, been kept in a quiet position, I see no reason why a cure would not have been

effected—and this, perhaps, with but a slight deformity, and little or no incapacity to perform moderate work.

The member of the old school—or rather of no school—who had the charge of this case from the first deserves, I think, at our hands, some credit for the opinion he had formed of the seat of the malady; he asserting that the mare was lame in the "round bone," using the general phraseology of this class of persons. It is probable that a more scientific observer would have formed a correct diagnosis even before displacement of the broken bones had taken place. His knowledge of the anatomy of the parts, combined with a different, and, as we may suppose, a more careful examination, would have enabled him to arrive at a definite conclusion, both as to the nature of the lesion and the best means to be resorted to to facilitate a recovery.

The history of the case also shows that for a certain period after the mare had met with the accident both the farrier and the owner felt satisfied with the progress she had made. All at once, however, the symptoms assumed a more serious aspect, which we may suppose led them to think that the case was not going on as it ought to do. This change the farrier could not account for satisfactorily, nor suggest what course was best to be taken under the circumstances. Had he been allowed, he, no doubt, would have continued to treat the poor animal, and probably until, from pain and suffering, her system had become worn out. Fortunately, however, both for the owner and the suffering animal, a member of the College was consulted as to the nature of the case, and the best course to be taken with it. A careful examination at once enabled him to pronounce it to be fracture with displacement of the bones of the pelvis; and as such, he advised that the mare should be at once destroyed, as he considered the case to be a hopeless one. The *post-mortem* examination brought to light the fractured state of the bones of the pelvis, as above described, thus proving the value of the opinion of a scientific practitioner over that of a common farrier.

I will now proceed to describe very briefly the particulars of another case of this kind which came immediately under my notice. In the month of October, 1864, I was requested to see a mare the property of a large farmer in Essex, which I was informed was under the care of a farrier, who had advised that she should be destroyed, in consequence, as he believed, of the pelvis being fractured. As she was very valuable as a brood-mare, her owner wished for a second opinion before acting on this advice, and I was therefore

requested to see her and form my opinion on the case. On my arrival at the farm I was taken to a large bullock-shed, in the centre of which, upon a well-littered bed of straw, I found my patient, lying in such a position as at once impressed me with the idea that a fracture either of the pelvis or the femur, at its upper part, or a dislocation of it, with the acetabulum, had taken place. She was resting partly on her right side, with her fore feet in a position as if about to rise, but without being able to do so, in consequence of having lost all power over her hind extremities. The near hind limb, which was cold, projected outwards and backwards in such a peculiar direction as to convince me that something of a very unusual nature, such as above alluded to, had taken place. Indeed, to satisfy my own mind, I needed no further examination; nevertheless, I deemed it proper to extend my investigation before giving a decided opinion upon the case. I asked the young man in attendance, who, it is to be regretted, is not a member of the profession, on what grounds he was enabled to speak so positively as he had done respecting the nature of the injury the mare had received. He replied, that when he was first called to the mare he distinctly heard crepitation in the region of the hip-joint; and by passing his hand up the rectum, he felt the pointed end of a fractured bone Although having no doubt whatever of the correctness of this opinion, I proceeded with my investigation, and first examined externally the left hind quarter. It was swollen, cold to the feel, and devoid of sensation when pricked with a pin. I had the limb moved by an assistant in various directions, but could not detect the usual indications of a fracture. excepting along the course of the spines of the sacrum, where I thought I could hear a crepitating movement. Pressure also being applied to this part caused the mare evidently to flinch.

I next passed my hand up the rectum, and, as far as I was able, explored the brim and the inner surfaces of the pelvis as far back as the tuberosities of the ischial bones, but could not discover any misplacement of the bones. Of the existence, however, of a fracture, I still had no doubt, but was satisfied that the broken fragments were concealed from the feel by the extensive hæmorrhage and serous effusions that had taken place. It was now left to me to decide whether the mare was to be destroyed or not, and I at once said "put the poor animal out of her misery as soon as possible, for she is suffering excruciating pain, and there is not the slightest chance of a cure being effected." The mare was immediately destroyed, and a *post-mortem* examination instituted on the spot.

Now came the test; and it certainly is not unfrequently an anxious time that is spent in making the dissection which is to develop or not that which has been asserted to exist. In this instance I was particularly struck with the anxiety evinced by the bailiff and others in attendance until the knife revealed the splintered bones, when all doubt of the correctness of the opinions given at once ceased. The fracture was found to be a comminuted one. Both the *ilium*, *ischium*, and *pubis*, were "smashed" into several pieces, the fractures extending into the acetabulum. The *capsular* and *teres* ligaments were torn asunder, as were also the muscles immediately surrounding the antero-inferior part of the hip-joint. Large blood-vessels also had been ruptured, allowing the escape of blood into the intermuscular spaces as well as into the pelvic cavity, thus preventing the detection of the fracture at the time I made the examination. So far there was nothing uncommon in the case, as fracture of the os innominatum is not very unusual, although, perhaps, not to the same extent as in this instance. On further investigation, however, I discovered that the *sacrum was also fractured*, and that in a very peculiar manner. I had suspected a fracture here, but I had no idea that the bone was broken in the direction I found it to be. Fractures of the transverse processes of the sacrum I have met with in several instances, but in this case the fracture extended in a longitudinal direction through the body of the bone, dividing the sacral canal throughout its entire length into two parts. Under these circumstances, the sacral nerves could not possibly escape pressure, a fact which accounts for the loss of the sensation in the hind extremities, the off as well as the near, and the total inability of the mare to raise her hind parts.

Cases of an unusual character, especially if they are associated with anything which may tend to elevate the profession, by showing the value of the opinion of the regular educated veterinary surgeon over that of the farrier or cow-leech, or in setting forth the necessity for great care to be exercised in forming a diagnosis before expressing an opinion, or in pointing out any new feature or circumstances in addition to those that are common in similar cases, are to my mind especially worthy of our consideration, and such I believe this one to be. Besides, this case beautifully illustrates the advantages which belong to the instituting an early examination of fractures of the pelvis in order to form a diagnosis upon which no doubt can remain.

Fracture of the sacrum is, no doubt, unusual, but its occurrence proves that this bone of the horse is not what the

Jewish rabbis thought it to be in man, a "sacred bone," which could not be hurt.

Thus, Butler writes—

> "The learned Rabbins of the Jews
> Write there's a bone, which they call 'Luz,'
> I' the rump of man, of such a virtue
> No force in Nature can do hurt to:
> * * * *
> "From whence the learned Sons of Art,
> *Os sacrum* justly called the part."
>
> *Hudibras*, cant. ii, part iii.

REPORT ON THE POISONING OF SOME COWS BY LEAD, COMMUNICATED TO MR. OWEN CROWHURST, OF HELLINGLEY, SUSSEX.

By Professor Tuson.

Chemical Laboratory, Royal Veterinary College, London; *July* 1*st*, 1864.

Sir,—On the 6th of June last, I received from you, through my colleague, Professor Simonds, the stomachs and intestines of two cows, a pickle-bottle filled with the contents of a cow's stomach, a bag containing coal-ashes, and a paper packet containing about ½ oz. of a coarse powder.

I have the pleasure to inform you that, agreeably to your request, I have submitted each and all of these materials to chemical analysis, and now furnish you with the following report upon the results of my experiments:

The stomachs and intestines.—The coats of these organs were separately analysed, and in each of them lead was discovered. The quantity of lead found, though necessarily small, appeared to be greater in the stomach than in the intestines.

The contents of the cow's stomach in the pickle-jar consisted of a small portion of a dark-coloured fluid and a large proportion of solid matter, the latter being chiefly fragments of brick intermixed with small quantities of broken earthenware and ashes. After separating the liquid and solid portions from one another they were each analysed. In the fluid a minute amount of lead was detected, while in the solid a very considerable amount of the same metal, existing, I believe, in the state of carbonate of lead, was discovered.

The coal-ashes.—Three different quantities of the ashes, taken

from the bulk received, were separately submitted to analysis. In one quantity a small amount of copper was found, but in the other two quantities not the slightest indication of that or any other poisonous metal was obtained.

The powder in the packet.—This powder consisted of ashes intermingled with a substance having a bright-blue colour. The results of its analysis proved it to be free from any poisonous agent.

Seven days after the receipt of the before-mentioned matters, viz., on June 13th, Professor Simonds handed me the powder referred to in your letter to that gentleman dated June 12th, which powder you state was taken from the stomach of a cow that died subsequently to her exhibiting symptoms similar to those evinced by the cows from which were removed the stomachs and intestines alluded to in the former part of this report. This powder contained a considerable amount of carbonate of lead.

The results of my analysis of the different materials enumerated above, therefore, clearly indicate—

1st. That lead existed in the coats of the stomachs and intestines.

2nd. That large quantities of carbonate of lead, a compound forming the basis of most pigments or paints, were discovered in the contents of the stomachs of two different cows which exhibited the same symptoms prior to death.

3rd. That, with the exception of an irregularly distributed and inconsiderable quantity of copper, no deleterious substances were found in the ashes.

In conclusion, I beg to state that arsenic, antimony, mercury, and the mineral poisons generally, were carefully sought for in each of the materials which you sent for analysis; but that lead was the only agent discovered to which the symptoms and death of the cows could be attributed.

I am, &c., &c.

The animals in question were the property of the Guardians of the Hellingley Union, and had all died within four days. At the time of their being taken ill they were out at pasture night and day, only coming up at ordinary milking times into the sheds. A week previous to their illness about a cart-load of ashes, &c., which had been accumulating at the infirmary attached to the union, was taken into a meadow and placed in a heap, and three days afterwards the cows were placed in this field. They were observed to be frequently at the heap and to be eating of the ashes.

The first cow was noticed to be ill on Tuesday morning,

May 31st, and Mr. Crowhurst's attendance was requested. He found her suffering from violent diarrhœa, the fæces being dark in colour and very offensive. The extremities were cold, the breathing increased, and the visible mucous membranes injected. Spasmodic twitching of the muscles existed, particularly those of the head and neck; strabismus was present, and likewise a peculiar champing of the jaw.

She lived until the following Thursday morning. On the Wednesday she got down and was incapable afterwards of rising, from paralysis in the hinder extremities. Six or eight hours before death efforts to vomit came on. Death was accompanied with strong convulsions, bellowing, &c.

The second cow was attacked on the Tuesday even ing, and lived only until the next evening.

The third was also taken ill at about the same time, but lived until the following Friday.

The symptoms in both these animals did not materially differ, according to Mr. Crowhurst's statement, from those in the first-named animal. Both were affected with paralysis of the hinder extremities, and died also in convulsions.

The *post-mortem* examination showed the rumen in each to be inflamed in patches, and the epithelium to readily peel off the mucous coat. A good many ashes were found in this viscus in two of the animals, but very few in the third. Ashes and ordinary earthy matters were likewise present in the abomasum, mingled with three or four pints of dark-coloured fluid. This organ was inflamed throughout in each case. The intestines also were much inflamed, but in patches. The liver was pale and soft, and the lungs congested. Neither the brain nor spinal marrow was examined by Professor Simonds, as these parts were not forwarded to the College.

Such is a brief history of these cases as detailed by Mr. Crowhurst, and investigated *post-mortem* by my colleague. They cannot fail to be of interest to the profession, more especially as the symptoms presented by the animals differed very greatly from those which are ordinarily said to belong to lead poisoning.

OBSERVATIONS ON "SOUNDNESS."

By R. H. Dyer, M.R.C.V.S., Torquay.

(*Continued from* p. 824, vol. xxxvii.)

We shall find, on reference to an old book I have frequently alluded to, namely, 'Markham's Master-piece,' that navicular disease was unknown among the older farriers, if we may judge from the following remarkable words, found at page 184:—"Now, if the grief of this halting be in the foot, then it is either in the coronet, in the heel, in the toe, in the quarters, or in the sole of the foot. Thus it will appear the navicular joint is not alluded to at all, as though it were not known to be *in* the foot. The late Professor Coleman lays great stress upon the fluid which interposes beneath the flexor tendon and navicular bone. He says, "But the flexor tendon and navicular bone, at this part, are protected from injury, not only by a cartilaginous covering, but by the intervention of a fluid between the tendon and navicular bone; besides, the lower surface of the flexor tendon rests on a very elastic substance, the sensible frog, which is capable of giving way to a much greater extent than the ligaments can elongate or the navicular descend. No part, therefore, can be better preserved from injury; one surface of the tendon being opposite to and in contact with a fluid, and the other surface resting on a bed of oil *contained in cells,* so that, in truth, the navicular bone, in health, never touches the tendon. [The italics are mine.] Every horsekeeper and helper in a stable has heard and used the old and worn-out phrase of *grogginess.* I believe I may, without fear of contradiction, assert that ninety-nine out of every hundred cases of navicular disease were what was called "groggy." The term *groggy* was, I suppose, produced by too great a stimulus in the shape of work, as grogginess in the human subject would be produced by a too copious and constant use of ardent spirits. The term is characteristic. When, however, we reflect upon the *sobriquet,* and apply it to lameness, it becomes in the present enlightened age but a poor direction-post to the student of veterinary medicine and surgery. The student at Guy's or St. Thomas's may as well talk of the old electuaries employed during the last century—he would be but little understood.

The history of the disease termed by Mr. Percivall "na-

vicularthritis," and by Dr. Brand "podotricholitis," owes its popularity to the exertions of the late Mr. Turner.

Mr. Percivall states, "My study of veterinary science, as a pupil, commenced and ended under Professor Coleman; and certainly never by my teacher, that I have the most distant recollection of, was the word 'navicular,' in connection with or reference to disease, once mentioned. I remember that the professor attributed foot-lamenesses in general either to disease of the sensitive laminæ or to contraction of the hoof, and in my notes of his lectures I find this memorable passage:—"In nine cases out of ten of what are termed 'groggy' or 'foundered' horses, these parts (the sensitive laminæ), in consequence of chronic inflammation, have become altered in structure, effusion of lymph or of bony matter taking place." It appears that up to the year 1816 the disease we are now discussing was almost entirely unknown, if we except the late Mr. Moorcroft's *coffin-joint lameness*, which doubtless was part and parcel of the same disease as Mr. Turner's.

To Mr. Turner, then, must we give all honour as the discoverer of the true nature of the malady, and his name will be handed down to posterity as one of the best practitioners ever known to exist. *Requiescat in pace.*

I have mentioned in a former paper of several causes being assigned for producing the disease in question—"over jumping, a step *after* a jump, a fall, a jar of *any* sort, but more particularly constant concussion upon irregular and hard surfaces." We find lamenesses very rife in hilly countries, concussion and overstraining going down hill being the principal causes thereof. I think we are all agreed as to the variety of the causes in operation to produce this species of lameness, nor do I think many opinions are likely to be found as to its being produced *momentarily;* this latter phrase it will be well to weigh well and carefully, as much of our good or bad reputation is based upon this word. I have seen several well-marked cases produced in a moment of time; whether there was or was not in either case an hereditary taint, I am unable to state. One case was that of a harness-mare, well known for years as a sound, clean-legged animal, whose feet were strong, good, and well shaped. I had known her several years, and she was regularly shod at my forge. This animal was being driven upon the turnpike-road, with another mare, by the coachman, whose employer was by his side, and who declared to me that the mare in question was travelling at the rate of about ten miles an hour with its fellow, when she suddenly fell lame. The owner said, "the mare has picked up a stone; get down and

remove it." He got down from the coach-box, and looked in vain for a stone. The gentleman and his servant were both at a loss to understand the meaning of this *contretemps*, and the only course left open to them was that of retracing their steps, and proceeding homewards, about one mile, and to send for the doctor. In a few hours I had an opportunity of seeing the case, which was one of acute inflammation of the navicular joint. Another case forces itself upon me at the present moment: it was a valuable huntress, the property of another gentleman residing in the same town. This animal was taking her usual morning *slow* canter upon turf in a field near the stables, when she all of a sudden fell lame in a similar manner to the first-named horse. I was sent for in haste, and was of opinion she too had an acute attack of naviculartheritis, produced, I was told, by a *slip*. Both animals were treated by me, and became sound. The latter required six months' rest from the time of becoming lame until she could be pronounced well enough to resume her duties in the field. She has hunted two seasons, and this makes the third. Cases innumerable could be adduced, tending to show how frequently naviculartheritis is produced in a moment. I am anxious to establish this fact, as, by so doing, it will save many an ill-natured observation. Much has been said and written as to the *kind* of foot found to be attacked with this disease. Open and wide feet are the subjects of it; narrow and contracted ones also are found having the same disease. From notes taken at Professor Spooner's lectures, is an observation to this purport:—"It takes place *generally* in fine *open feet*, and it is *not* produced by the foot being at rest." If my notes are correct, which I believe them to be, we have good reason to know how often persons are mistaken as to the *kind* of foot having navicular disease. My own impression is that the disease is found in *all* kinds of feet.

Is the disease of an hereditary nature? I believe the generality of veterinarians are of opinion it is so.

What, then, are we to consider essential as preparatory to our examination of the feet? There are several things necessary to be observed. 1st. That the horse should be placed at rest, where he may suit his position to circumstances, if I may so express myself; or, in other words, the horse should be placed in a stall or box *without restraint*, and as far away as possible from the *man with the whip!* It is not astonishing that an intelligent animal, as the horse is known to be, should acquire early education in the use of the whip. In the dealer's stable this is particularly the case.

Much attention should be paid as to the position of the

fetlock-joint. We are, I think, all too prone to dwell a good deal upon that symptom designated *pointing*. I am inclined to think there is much to be learned in viewing the position of the limb from the knee downward to the navicular joint. Many horses rest themselves and the navicular joint also *without advancing* the foot. If we observe a kind of knuckling of the fetlock-joint, and an upright position of the ossa suffragenes and coronæ, we may look suspiciously at the joint immediately under the foot, although advancing the foot a few inches in front of the body will effectually relieve the tendon from pressure; so I am inclined to think the peculiar position I have hinted at will effect the same purpose. It is not necessary that all horses at all times should have recourse to the same means precisely to obtain relief. Those who will take the trouble to examine for themselves will find horses seldom rest themselves exactly alike, especially when in pain. The *action* of horses affected with navicular disease is peculiar, and not to be mistaken in the latter stages of the malady; they are so obvious to all horsemen that no comment is necessary. I am of opinion no man should mistake as to lameness being in the shoulder or foot. As a general rule, the part of the limb diseased ought to be seen and known before handling. This is easily acquired by experience, as well as a lame horse is known by the ear. I remember the late Professor Sewell used to say it was a common thing for some veterinarians to turn their backs upon horses during trials as to lameness; they could *hear* which was the lame foot, and which were not lame. This is easily accounted for, although persons with unmusical and defective hearing could not hope to accomplish it. When a horse is presented for examination it is well to get the first sight of him as he is being brought out of the stable. *This is a very important time to look at your patient.* Sometimes the *first step* is the only one to rest your suspicions upon. Lose this, and you have lost a golden opportunity. It may be urged, how is it possible to do all this at a fair? I know there are difficulties almost insurmountable everywhere; at the same time, both eyes must be kept open. Suppose a case of this sort be presented at a fair; if we inform our client of the difficulties we labour under in the examination, he will, if possible, arrange for a further examination under more favorable circumstances, and if this is objected to on the part of the seller, the probability then is there is a loose screw somewhere. Our timely remark will stand in our favour with our client at least.

(*To be continued.*)

BOTANY AS APPLIED TO VETERINARY SCIENCE.

By W. Watson, M.R.C.V.S., Rugby.

(*Continued from p.* 766, vol. xxxvii.)

There are but few orders of plants in the vegetable kingdom possessing so many features of general interest to the veterinary surgeon as the "natural order" *Ranunculaceæ*. They are found growing in abundance in almost every situation in this country, and most of them possessing (to a greater or less extent) acrid or narcotic irritant properties, as render their injurious or fatal effects upon animals at any time liable to be brought under our notice. I would, therefore, recommend all those who feel interested in this subject to make themselves as familiar as possible with *all* the indigenous plants belonging to this order, inasmuch as want of space will necessarily confine our observations here to those plants which in some form or other have been brought more prominently before us. Among the plants yet to be described are the *Hellebores*, which are known as follows:—the *White hellebore* (*Veratrum album*), *Black hellebore* or *Christmas rose* (*Helleborus niger*), *Green hellebore* (*Helleborus viridis*); and the *Stinking hellebore*, or *Bear's-foot* (*Helleborus fœtidus*).

The *Veratrum album*, although called the *White hellebore*, has no botanical relation to the other three varieties, but belongs to quite a different class and order of the vegetable kingdom, viz., the natural order "*Melanthaceæ*," being closely allied to the *Colchicum autumnale*, and will, therefore, be brought under notice when describing that order of plants.

The following botanical characters by which the *Helleborus niger* is distinguished are taken from 'Royle's Materia Medica:'—"*Helleborus niger* (*Black hellebore* or *Christmas rose*).—The plant is herbaceous, with a perennial blackish-coloured rhizoma, tuberculated and scaly, from which descend numerous thickish radicles. The leaves, which sometimes make their appearance after the scape, are radical, with long cylindrical and spotted foot-stalks, pedately divided with the lobes from seven to nine, oblong lanceolate, sometimes cuneate-obovate, largely serrated towards their apices, and arranged apparently along the forked terminations of the petiole; they are stiff, almost leathery, of a dirty green colour, smooth above, paler and reticulate beneath. The scape is shorter than the petiole, furnished with two or three

oval bracts, often simple and single-flowered, sometimes forked and two-flowered. The flower is large, terminal, white, with a tinge of pink, the most conspicuous part being the petaloid calyx; of this the sepals are five, ovate and permanent. The petals, eight to ten, are small, greenish coloured, tubular, tapering towards the base, with the limb tubular, bilabrate, and their outer margins terminated in a tongue-shaped lip. *Stamens*, numerous, larger than the petals. *Ovaries*, six to eight. *Stigmas*, terminal, orbiculate. *Capsule*, follicular, leathery. *Seeds*, many, elliptical, umbilicated, arranged in two rows."

This plant is named *Black hellebore* from the dark colour of its roots, and *Christmas rose* from its flowers appearing in winter, generally towards the end of January. It is also known in Lancashire by the name of *Brauk-ursine*. It is a native of Austria and Italy, and has been chiefly cultivated in this country as an ornament to our gardens, since about the year 1596. All parts of the plant possess active properties, generally supposed to depend upon a peculiar principle named helleborine, but the root is the part generally used in medicine. This is generally imported in bags or barrels from Hamburg, and consists of two parts, the rhizome or root-stalk, and the radicles or fibres which arise from it. The former, generally, "some inches long, and half an inch thick, straight or contorted, is marked with transverse ridges, being the remains of the leaf-stalks, and on the under surface with long fibres, all more or less of a dark-brown colour internally, with a white point in the centre. The odour of the dried root is feeble, the taste, at first sweetish, soon becomes bitter and nauseously acrid." Professor Bentley has noticed this root to be frequently adulterated with that of the *Bane-berry* (*Actæa spicata*), and gives a detailed description by which the roots may be distinguished, which will be found in the *Veterinarian* for May, 1862. The use of *hellebore* as a medicinal agent among animals is chiefly confined to its outward application; it is frequently employed as a seton amongst cattle; and Professor Morton, in his 'Materia Medica,' says, "Mr. E. Stanley employs it in fistulous affections of the poll and withers with almost uniform success." As a poison, its effects are very powerful; Hertwig says, "quantities of from two to three drachms produce in horses colic, enteritis, and death in from forty to fifty hours, and from one to three drachms produce similar effects amongst sheep and goats." Pereira says, "given by the mouth to the carnivora (as dogs), it causes vomiting, frequently purging and griping. In excessive doses it produces gastro-enteritis. If the œsaphagus

be tied to prevent the ejection of the root from the stomach, it causes staggering, weakness, or paralysis of the hind extremities, insensibility, and death; similar effects result from its application to a wound." From this plant being only cultivated in gardens, there are but few cases of accidental poisoning amongst animals recorded; a very interesting one, however, will be found in the *Veterinarian* for May, 1855, communicated by Mr. Hammond, in which the death of two cows was caused by the *Helleborus niger*. The animals belonged to Mr. Westwood, of Stow, near Downham Market, Norfolk, who had thrown some portions of the plant from his garden into a yard in which the two cows had been for some time kept on dry food, and soon after the animals were found "eating it very ravenously." This took place in the afternoon, and, on the following morning, one cow was found dead and the other very ill. Mr. Hammond describes the symptoms as follows:—"Purging, rumen distended with gas, saliva dribbling from the mouth, animal constantly lying down and getting up, and when made to move uttering a low groan. This cow also died in a very short time, being about twenty-four hours after she had partaken of the hellebore plant."

(To be continued.)

ON MILK FEVER IN COWS.

A Paper read before the Members of the LANCASHIRE VETERINARY MEDICAL ASSOCIATION.

By J. HOWELL, M.R.C.V.S., Rochdale.

THE diseases affecting cows as a consequence of parturition are of such a direful character, and the fatality so great, that any observations respecting their pathology and treatment that may have a tendency to lessen the loss annually occurring to the owners of this kind of stock will, I trust, be a sufficient apology for bringing the subject before this association.

It is not for the purpose of introducing any particular plan of treatment, or that I have anything novel as to its pathology, that has induced me to bring the subject before you; but because it is a disease next in importance, if not more so, than pleuro-pneumonia; while I hope the discussion that may follow will throw additional light upon this imperfectly understood class of maladies.

To the junior members of the association, who may, like myself, be called upon to treat the diseases of cattle as well as horses, the subject will, I trust, prove instructive, and be the means of assisting them onwards in the difficult path of cattle pathology.

The term "milk fever," by which this malady is generally known, is much less objectionable, in my opinion, than that of "puerperal fever," which name I conclude has been given to it from some supposed analogy or resemblance to puerperal fever in women; but, so far as I have been able to judge, the name is not at all applicable.

Metritis, or inflammation of the uterus in the cow, is a very different malady to the disease I intend bringing under your notice in this essay; and as to peritonitis, simply as a consequence of parturition, excepting after some violent or extraordinary efforts to extract the calf, it is almost unknown, so far as my observation has gone.

During a residence of many years in the county of Gloucester, and practising amongst the dairy-farms of the district so celebrated for its cheese, these affections of newly calved cows were unknown to me. It is true I frequently met with cows, mostly aged ones, that were down and suffering from paralysis, both before and after calving; but these cases might well be attributed to exposure to the inclemency of the weather, want of good and sufficient fodder, &c. No sooner, however, had I began to practise in this county than my attention was directed to them in all their intensity.

During my pupilage at the Royal Veterinary College the diseases of cattle were scarcely dwelt upon (it is not so now, I am glad to say), consequently I had to glean from other sources a knowledge of these affections, and the principles that should lead me to adopt a successful mode of treatment. To Mr. Friend, Mr. Robinson, the late Mr. Barlow, Professor Simonds, and other gentlemen who have recorded their opinions and observations in the pages of the *Veterinarian*, and also in the volumes of *Transactions of the Veterinary Medical Association*, I am very much indebted, and from these communications I may quote in this essay.

Various names have been given by different writers to these diseases. The most popular in this locality is "milk fever," "dropping after calving," and "puerperal fever."

I propose to further divide the same into three classes, viz.—

1. Parturient apoplexy.
2. Parturient and puerperal fever.
3. Simple paralysis.

Symptoms.—The first thing that generally attracts the notice of the attendant is a little dulness of the animal, drooping of the head, fulness and hardness of the udder, with difficulty in obtaining any quantity of milk; she has ceased to ruminate, and has been perhaps obstinately standing for some time paddling of the feet; in some cases there is a stiffness of the hind legs, with a spasmodic catching up of the same, which often ends by the front of the fetlock coming in contact with the floor; the eyes are dull and glassy, the horns and ears generally cold, the muzzle dry, the bowels constipated, the pulse quickened to perhaps 70 or 80 beats in the minute, which is sometimes full and oppressed; the breathing is more or less hurried; she falls or rather blunders down, perhaps to rise no more, or she may get up again, stagger about for awhile, grinding the teeth, champing the jaws, &c., until she again falls down; delirium ensues, she is unconscious, the power of deglutition is nearly or wholly gone, the rumen begins to fill enormously, and, if not relieved, death soon closes the scene, and this often in an hour or two after the first appearance of the animal being amiss.

In other cases the patient sinks into a state of coma; the eyes become closed, with a profuse discharge of the lachrymal fluid down the cheeks; grinding of the teeth; the head is heavy and turned round to the shoulder, or is rested on the ground. In this state she may lie for several hours, the powers of life gradually ebbing away. Should she survive this stage for any length of time, say ten or twelve hours, there is a probability of her recovery. I have met with a case or two in which the patient lay in this comatose state nearly, or quite, thirty hours. Often I have known them doze for from ten to sixteen or eighteen hours. Consciousness then returning, the milk begins to be again secreted, the bowels respond to the remedies administered, and the patient ultimately recovers. But sometimes, in these severe cases, altnough consciousness returns, the milk is freely given, and the appetite is good, the patient is unable to rise for several days, and perhaps not at all. If placed in a loose box or on a barn-floor, she drags herself about; swelling of the hocks and knees come on; perhaps one leg has become completely paralysed, and if the poor creature is lifted on to her feet she is unable to bear any weight on that limb.

There are other secondary symptoms which I need not dwell upon, such as congestion of the lungs, diarrhœa, &c., which often destroy all our hopes of the patient's ultimate recovery.

In other cases the symptoms vary much. You may find

the cow down, and unable to rise, although she makes frequent attempts to do so. She is feverish, pulse from 60 to 70, breathing a little quicker than natural, secretion of milk suspended, appetite gone, rumination also suspended; bowels generally constipated, although sometimes relaxed; occasionally pains present resembling those of calving; retention of urine, ears and horns cold.

These cases, under proper care and treatment, commonly recover. To cases such as this I would apply the name of "milk fever."

Simple paralysis of the hind extremities I have frequently met with when the cow has eaten or drank freely, giving also a pretty good quantity of milk, but unable to rise. These cases generally occur in aged cows having large pendulous bellies, that have borne several calves, and perhaps been exposed to the weather. I have found this state to occur both before and after calving.

It does not appear that any breed of cattle is exempt from this class of diseases. I have met with it in all the breeds to be found in this district, and also at all seasons of the year; but I am confident of this, it prevails more in some years or seasons than in others—sporadically, as it were.

Cows that have yielded a large quantity of milk, "good milkers," are those we generally find attacked. In fact, it is well known that the pure-bred short-horn is seldom or never met with labouring under this affection—and why? Because the predisposition to fatten is so great that they seldom give enough milk to support the calf. Several instances confirmative of this came under my notice whilst attending the pure-bred stock of the late Lord Ducie.

The age at which cows are most liable to these severe affections I have found to be after they have arrived at the adult period, most of my cases occurring at the third calving, although those occurring after the fourth or fifth are by no means uncommon; and the period of accession mostly from twenty-four to thirty-six hours after calving; but this is not always so, for I have met with several cases occurring as late as the fourth day.

Several times have I been called upon to attend the same cow a second time, and sometimes with perfect recovery, an instance of which took place lately. Being called up at 1 o'clock in the morning to see the cow, I was reminded it was one I attended last year. She has again done well, but has had a very narrow escape.

There is a very general opinion prevailing that the cow is the only animal liable to be attacked with milk fever. From

this doctrine I must certainly beg leave to differ, having in the course of practice attended two well-marked cases of parturient fever in the sow, where there was complete prostration of the vital powers, loss of motion, sonorous breathing, great heat of skin, costiveness, and secretion of milk totally suspended.

Both of these cases recovered in from two to three days. The treatment I adopted was opening the veins of the ears, followed by the administration of sulphate of magnesia and croton oil, &c.

The recovery was very rapid in each case, as soon as the bowels responded to the action of the medicine.

Causes.—These may be divided into exciting and predisposing. The exciting one is parturition. The predisposing ones are, in my opinion, the keeping of the animal on too stimulating food, which has induced a plethoric state, and too great fulness of the vascular system; an excitability of the nervous system; want of sufficient exercise, and anything indirectly preventing a full secretion of milk.

The practice of removing the calf from its mother almost the moment it comes into the world is also one, I believe, that operates very materially in predisposing the parent to these affections. If the mother, previous to parturition commencing, was placed in a loose box, and when that process was accomplished the young animal was allowed to remain with her, instinct would soon tell her what to do, viz., to lick and cleanse her young progeny, a process so very pleasing to mares, cows, sheep, and other animals. Her attention is thus taken up with her young, which in a little time is able to stand, and soon commences drawing away at the paps; and all of us know—that is, those who know anything of cattle practice—how much more freely the cow "lets down" her milk to her calf than she will to the milker.

Instead of the poor creature being thus left as nature dictates, she is deprived of the company of her young. She is at the same time too liberally supplied with good gruel, the udder is attempted to be emptied of its contents; but nature not wishing thus to be interfered with, she oftentimes refuses to yield the quantity of milk she ought to, and the consequence is the udder becomes congested and swollen; milking her becomes a task, and it ultimately ceases altogether.

The great quantity of blood going to the uterus during the period of gestation being no longer required after parturition is accomplished, nature having made other provision for the support and growth of the young animal, viz., a bountiful

supply of the lacteal fluid in the udder, it is very evident that, unless the due quantity is immediately, or soon, kept secreting, the consquences become manifest in disturbed function, causing congestion or effusion of the brain and nervous system.

As one of the objects I had in view in introducing this subject to the notice of this association is to arrive at, if possible, the cause of these diseases, I cannot do better than quote from an essay from the pen of the late Mr. Barlow, —whose untimely loss to the profession all must deplore— which appeared in the *Veterinarian* twenty years ago; and although occurring so many years since, it can, I scarcely think, be much improved upon even at the present time.

He says:—"A notice of causes inducing this disease involves many important considerations, due attention to which I conceive necessary properly to account for the morbid phenomena exhibited. The cow, of all other animals, is destined to afford the largest amount of that wholesome and nutritious beverage, 'milk.' Fully to provide for the fœtal growth, there is, in mammalia, during gestation, a greatly increased, and the nearer parturition a more rapidly increasing, development of the vascular system in the parent; but, perhaps, in no animal does this correspond in extent with that of the cow, which may be accounted for by the fact that Providence has destined her, not only amply to provide support for her offspring, but also to contribute largely to that of mankind. Hence her peculiar liability to various diseases, both in a puerperal and barren state, arising from the existence of a larger quantity of blood in the system than is immediately necessary for growth and nutrition.

"In making these remarks my intention is to render it obvious that, shortly previous to and at the time of parturition, there is, from the requirement of increased activity, both in the animal and its organic functions, an increased stimulus or action required to be exercised by the nervous centres in order effectually to secure their performance.

"It has been ascertained by Dr. R. Lee, of London, that, during conception, not nerves only, but considerable ganglia, previously not perceived to exist, are apparent in the vicinity of the uterus. Such stimuli, of a nature and duration unknown on any other occasion, must therefore be favorable to a development of disease, by rendering the nervous system susceptible of impressions which under other circumstances might not have operated thereon.

"This extremely vascular state of the system is, in ordinary cases, relieved by a plentiful secretion of milk, which

nature, as it were, providing against consequences, excites the udder to secrete some time previous to parturition.

"In other cases it is different; and we are all perfectly aware of the physiological truth that any organ ceasing to perform its usual action in the animal frame cannot suddenly resume it; in fact, we know that, if it be suspended for any undue time, it is incapable of being again re-exercised. Although this may apply less to the udder than any other organ, still it must be confessed at times to fall within the general application of this principle, and not after all cases of parturition to regain its former activity."

The *post-mortem* examinations of those cases that end fatally present different appearances in different animals, depending entirely upon the symptoms evinced during the progress of the disease.

We should be able to arrive at a better knowledge of these maladies if we could oftener have the opportunity, and had the leisure time at our disposal, to make careful *post-mortem* examinations of well-marked cases from the commencement of the attack to its termination; but, unfortunately, this we are frequently unable to do.

In the majority of cases the owner is too anxious to make the best of the carcass; and the cow being generally in the best condition, it is made the most of by being dressed and sold to the butcher. In the majority of cases I have had the opportunity of examining that have died from apoplexy I have found more or less congestion of the brain and its meninges and extravasation of blood to exist. In some extremely severe cases the extravasation has been very considerable indeed, both on the superior surface of the cerebrum and also on the medulla oblongata. In cases that have ended in coma, and where the patient has gradually sunk away, the morbid appearances of the cerebrum and cerebellum are less conspicuous. There is more or less congestion, but I have found it more serous than sanguineous. The spinal column also partakes of the same character, more particularly the lumbar portion. But it will frequently happen that after a careful *post-mortem* examination you will fail to discover any very marked alteration in the appearances either of the brain, spinal marrow, or its coverings, excepting some little congestion of its vessels, or perhaps a slight inflammatory blush pervading the spinal marrow and its sheath at the lumbar region. This is so far, at least, as my observations have gone. The lungs are generally found healthy. *Sometimes*, however, one or both are congested. The digestive organs seldom show any morbid alteration. The maniplus is

often found to be hard and full, more particularly if the cow has not had a free evacuation of the contents of the bowels; but this I do not consider to have had any more effect in inducing the disease than it would any other, for I have found the contents of this viscus as hard as chips after fatal cases of red water, and where none of the symptoms of derangement of the cerebral or nervous systems were witnessed during life. The uterus has often been described as being in a state of inflammation. The peritoneal membrane also should show most marked appearances of inflammation if the disease be one of puerperal fever, analogous to that in the human subject; but our *post-mortem* examinations do not bear this out; at any rate, mine do not. The uterus in nearly all, perhaps I may say in all, the cases I have examined, has been seen to be in a perfectly normal state, taking into consideration the length of time that has elapsed since parturition took place.

In those cases of obstinate paralysis of the extremities frequently supervening these severe attacks, where you are annoyed by the inability of the cow to rise, perhaps after being down for two, three, or four weeks, the animal being at the same time apparently well, as far as the appetite, yielding of milk, &c., go, but still paralytic of one or both hind legs, the limb or limbs will generally be found to be engorged, stiff and swollen at the hocks and fetlocks, and oftentimes troublesome; unhealthy abscesses are formed, and at other times *sphacelus* takes place, when it becomes apparently useless attempting to prolong the life of the animal.

Treatment.—The treatment of these cases, if to be at all successful, must be prompt and energetic; and it frequently happens that, in spite of all our remedial measures, it is attended with a fatal result.

My plan is to treat symptoms as they may appear, and not lay down one mode of specific treatment for every case, as some would-be-knowing ones do, viz., to bleed in every case. The indiscriminate resort to bleeding by country cow-doctors, has hastened the death of many a poor beast. Bleeding is very beneficial if you are called in before the cow has actually fallen, or if she has but recently fallen, and the symptoms show a high degree of vascular or cerebral disturbance. In milder cases, which I would term milk fever, I seldom bleed. In the comatose state, the patient being cold, and nearly pulseless, bleeding is highly injurious.

Purgatives are admissible in all cases, even if you find some degree of relaxation of the bowels present, provided that state has not been brought on by purgative agents. I give a dose of purgative medicine, and a combination of those

agents that are known to excite the bowels to action are to be generally advocated in the treatment of the diseases of cattle; but in these maladies, I think, it is more necessary than in any other. The sulphate of magnesia, aloes, croton, chloride of mercury, &c., are the ones I generally make use of, the repetition of which must be left to the discretion of the practitioner.

Stimulants are another class of agents frequently of very great benefit in these cases, and may be divided into those externally applied and internally administered. My plan of employing external stimulants is by means of strong liniments to the head, roots of the horns and ears, as also over the lumbar portion of the spinal column.

Hot irons to the back for an hour, before the liniment is applied, is a favorite remedy with many, and I have found it of great service in arousing the patient.

The "cold pack," when the patient is in a comatose state, is a most excellent remedy, and has been attended with great success in the hands of my friend Mr. Cope, V.S., of Newark, as well as myself.

Sheep-skins over the loins, if the cow has been down some time, and is unable to rise, I have found to be very useful.

Of stimulants internally administered, I prefer the Spt. Ammoniæ Aromaticus, the sesquicarbonate of ammonia, and, in some severe or urgent cases, ardent spirits, as brandy, whiskey, or whatever is more readily obtainable. My usual practice is to give the Sesquicarb. Ammon. ʒij or ʒiij, in the form of ball, every two or three hours, if the cow is in a comatose state, sometimes adding a few grains of the croton farina to each ball if the bowels are very costive.

It will not unfrequently happen that, from pressure or some other cause, the eighth and ninth pair of nerves going to the pharynx, stomachs, &c., have lost their power of stimulating the entrance into the œsophagus, and that liquids poured into the mouth will be almost certain to get into the trachea, and thus produce most serious consequences. In these cases you need not be without hope. I frequently pass a small tube, made of gutta percha, into the œsophagus, then attach my Read's syringe, and by this means give brandy, gruel, or medicine. Another advantage you will obtain by being provided with a tube or probang of this sort—by the use of it you can relieve the *hoven*, which frequently in this case is very great, and thus avoid the necessity of puncturing the rumen. Not long since I was called to a valuable cow, which I found stretched out on her left side, the rumen immensely distended, dashing her head about, foaming at the mouth, grinding of the teeth,

&c. She had not been down an hour, and had not yielded much milk that morning. I endeavoured to ascertain if she could swallow, but found she could not, any attempt to do so being attended by a fresh paroxysm of the symptoms. Being but a little more than a mile from home, I hastened back for my tube, syringe, &c., telling the attendants to keep the animal on her belly, if possible. I soon got the tube into the rumen, allowing an immense quantity of fetid gas to escape, and then gave her Sp. Ammon. co. ℥iv, by means of the syringe. She soon began to open her eyes, and look better. I waited an hour longer, when, as she did not get so warm as I could wish, I gave her, by means of the tube and syringe, as she was still incapable of swallowing and the rumen was again filling, a pint of brandy in warm water. She was much improved on my visiting her in the evening, and was on her feet the next morning.

In the milder forms of this disease—that is, where there is little or no disturbance of the nervous centres, the cow is down, and there is inability to get up, pulse quick, secretion of milk suspended, udder swollen, and the symptoms altogether being those of fever, I principally depend upon the administration of a dose of purgative medicine, followed up by small doses of Mag. Sulph., Tincture of aconite, Liquor Ammon. Acetatis, Potass. Nitras, &c.

In cases of simple paralysis, after attending to the bowels, I give a dose of tonic medicine twice a day, and with it a ℈j or ℥ss of Pulv. Nux Vomicæ, apply stimulating liniment or sheep-skins to the loins, &c., and allow a more liberal diet.

In two cases of paralysis of one hind leg, after the more urgent symptoms had subsided, I tried the effects of the electro-magnetic current to the limb. In one case it proved very successful, in the other it was not so much so. The cow was in this case suffering from congestion of the lungs, and had ultimately to be destroyed.

In the successful case the left hind leg was quite paralytic. When the cow was made to get up—which, at the time I began operating, she had to be forced to do—the front of the fetlock rested on the floor. I began by giving her a few shocks once a day, and then night and morning, for a fortnight, with marked benefit. In fact, her improvement was rapid and permanent.

To the junior members of this association who may be present this evening, and who are likely to be called on to treat the diseases of cattle, I should like to offer a word of caution when called upon to give an opinion respecting the

probability of the duration or termination of these affections, as in no other class of diseases, affecting cows, will they find such rapid changes take place, both from a state of apparent recovery to a fatal termination, and *vice versâ*.

In conclusion, Mr. President and gentlemen, allow me to tender my best thanks for the very patient manner with which you have listened to these, I fear, imperfect remarks on a somewhat diversified subject. The discussion that may follow will, I hope, be conducted in a truly practical and scientific spirit; so that we may all ultimately gain something really useful as to the correct pathology and treatment of these direful maladies.

By so doing we shall confer honour, not only to the veterinary art as applied to cattle pathology, but a lasting debt of gratitude will be awarded us by our employers.

I have appended two cases taken from my note-book. One I call parturient apoplexy, and the milder form parturient fever.

Case 1. *Parturient apoplexy.*—March 6th, 1858, 11.30 p. m. I was called to a cow, the property of Robert Kelsall, Esq., Deeplish Hill, near Rochdale. She had calved the day previous at 4 p.m., without any difficulty, and "cleansed" directly afterwards. She is a large-sized cow, in full condition, roan colour, short-horn breed, seven years old, and this is the fifth calf. She has fed well since calving until 9 p. m. Her food has been bran mashes, gruel and hay; also some new draft or brewer's grains have been given to her this evening.

Symptoms now present.—Eye staring, horns and ears cold; pulse 60, and full; the breathing hurried; she is standing or rather tottering, her hind legs very stiff and one or other knuckling at the fetlock; when attempted to be moved she nearly falls down; udder very much enlarged, congested, and refusing to yield milk; has milked well since calving until now; the calf has been allowed to suck part of the milk; the bowels are costive, but she urinates freely.

Prognosis.—Unfavorable.

Treatment.—Venesection, four quarts; gave her a strong purgative drink with ℥ij Sp. Ammon. Aromat. Stayed with her two hours, when she became easier, and laid down very nicely, when I left her in the care of the cowman for the night.

March 7th, 6 a. m.—Called to the patient again, being much worse. She was lying on her right side and dashing the head about; champing of the jaws; grinding the teeth, and making a noise as if she was cracking something between

the teeth; her legs were stiff; respiration laboured; pulse 100; enormous distention of the rumen.

She was with difficulty placed on her belly, and her nose held out straight, when a great quantity of fetid gas escaped from the rumen. The bowels have not yet acted; her teats have been drawn every hour, but not a pint of milk has been obtained. Administered brandy with ammonia. This appeared to give relief, for she was quiet afterwards for two hours, when she again became very restless, twisting and turning herself about and dashing her head against the partition and wall. She continued much in this state until 11 a.m., when the owner thought it advisable to have her killed.

Post-mortem examination at 2 p.m.—The butcher had chopped off the horns, but fortunately the brain was not touched. I had, therefore, a good opportunity of examining the cranium and its contents, which I was very glad of, for in all my experience I have never met with such an amount of extravasated blood. The superior part, as well as the base of the brain, was covered by a thin coating of blood. It also extended underneath the dura mater to between the two hemispheres, and over the cerebellum. On removing the brain several large clots of blood filled the cavities in the cranial bones. The cineritious structure of the pia mater presented a beautiful specimen of morbid anatomy, being changed into a dark colour, the vessels congested, &c., evidently establishing the nature of the attack to have been one of sanguineous or parturient apoplexy. I carefully examined the whole of the viscera, and could not detect the slightest disease. In fact, a more healthy beast has seldom come under my notice.

Case 2. *Parturient Fever.*—The cow was the property of Mr. James Whitehead, near Rochdale.

March 10th, 1858.—Cow calved yesterday morning at 5 o'clock. It was the third calf; she has not had a calf since August, 1856.

Symptoms present.—Animal very restless; eyes staring; nervous look; frightened at the least noise; constantly blundering up and down; has been down a dozen times within the last hour; udder hot and hard; milk can scarcely be obtained now, but has milked freely up to this morning; dung soft, urinates freely; pulse 89, hard and wiry; breathing but little disturbed; horns and ears warm.

Treatment.—Withdrew blood to the amount of three quarts; gave a strong purgative drink, and also treacle and water freely.

7½ p.m.—Animal quieter. She jumped up on my going up to her; the bowels have acted, and she still urinates freely; pulse 80, and softer; udder softer, and she has given a little more milk. To have hay tea; continue the treacle and water, and give, with Mag. Sulph., Tinct. Aconiti gtt. xx, every four hours.

11th, 9 a.m.—She is better and on her feet; has taken a little mash; extremities warm; she gave four quarts of milk at 5 o'clock.

12th.—Cow doing well, giving her milk freely, and appetite increasing.

13th.—Animal convalescent.

SEVERE ATTACKS OF INFLUENZA.

By J. Cooper, M.R.C.V.S., Market Weighton.

I am induced, Messrs. Editors, to send you an account of the most fatal malady occurring in my practice that I ever encountered; and I hope it may be of sufficient interest to court discussion in your valuable Journal.

The first case occurred in August last, when I was requested to attend an aged black mare. On my arrival I found the throat was enormously swollen, threatening suffocation. I immediately opened the trachea; and, being obliged to send a messenger for my tube, I held the wound open until his arrival. The breathing was at once relieved. The pulse was 60, and extremely weak; saliva flowed from the mouth; the legs, &c., were cold. My treatment consisted in clothing the body, applying hot fomentations to the throat, washing the mouth with a solution of Potassæ Nitras, and steaming the head. As no medicine could be administered, I threw up injections of soap and water. The mare became gradually worse, and died the following morning.

The swelling of the head was enormous, and extended down the neck to the chest. I had not an opportunity of making a *post-mortem* examination of the case.

December 8th, at 4 p.m., I was again sent for to the same place, to see a brown horse. He was off his feed; had a dull, listless appearance; staggered in his gait; pulse imperceptible at the jaw, 80 at the axilla; breathing slightly accelerated; the body and legs cold.

Diagnosis.—An attack of influenza. *Prognosis.*—A fatal termination.

Treatment.—Gave stimulants, and applied mustard to the sides and throat, steamed the head, clothed the body, and bandaged the legs, after being well hand-rubbed. This animal died the following morning. I could not make a *post-mortem* examination in this case either, being very ill.

12th, 3 p.m.—I was again summoned to a chestnut mare, seven years old; pulse 50, and weak; breathing slightly accelerated, and rather loud, but not more so than one generally finds in laryngitis; mucous membranes pale-coloured.

Treatment.—Gave a draught consisting of—

Sp. Æth. Nit., ℥j;
Aloës Bbd., ℥ij;
Ext. Belladonnæ, ℥j;
Aquæ, q. s.;

Nitras. Potass. to be given in her water; applied a strong blister to her throat and sinapisms to the sides; clothed the body and legs, and steamed the head with hot bran mashes. I anticipated a speedy recovery in this case, but was again doomed to disappointment.

13th, 3 a.m.—I was summoned in haste, as the mare was apparently being suffocated, and I just arrived in time to save her from immediate death by performing tracheotomy. I abstracted blood until the pulse was almost imperceptible. No medicine could now be administered. This case appeared to be nearly the same as the first one. Fomentations were applied, injections given, &c. She seemed to be much better during the day, as she drank a little gruel, and the pulse fell a little.

I visited her again in the evening, when I found her worse; the breathing was seriously affected, the pulse quicker and weaker, and all hope of recovery was lost. The animal died the following morning.

Two more horses were observed to be off their feed last night. They had given them a ball containing Potass. Nit., Antim. Tart., Camphor, and Ext. Belladonnæ.

14th.—This morning I was accompanied by Mr. Littler, V.S., and we made a *post-mortem* examination of the chestnut mare. The trachea and bronchial tubes were filled with frothy mucus, the lining membrane highly congested, the lungs almost black, the pharynx and larynx had the same appearance, the tissues surrounding the parotid and submaxillary glands were considerably distended with coagulated lymph, but the glandular substance itself was not much enlarged; the stomach was slightly ulcerated, and the

intestines congested in patches. All the other organs appeared healthy.

Mr. Litler and I next consulted on the two mares that were attacked last night. In these cases there was no swelling of the throat present, but a low sinking typhoid fever; the pulse weak, the breathing slightly accelerated, the body and extremities cold. Singular to say, there has never been any cough, although the mucous râle is very perceptible.

We came to the conclusion that nothing but stimulants and counter-irritants would be of any service. I need not record my daily treatment. Suffice it to say that to one case I gave three bottles of wine in the twenty-four hours without any beneficial effect. I combined tonics with stimulants, and gave the nitro-muriatic acid with the same object. All, however, proved of little avail. Medicine serves only to prolong their lives.

A foal was taken ill on the 15th, and died upon the 16th, without any treatment being adopted. The throat was the same as the chestnut mare's. It died of suffocation.

The brown and black mares both died—one on the 18th, and the other on the 20th; but in these cases their throats were not in the same state, although in the last-named there was a considerable discharge of bloody serum from the nose, accompanied with large flakes of fibrinous matter, which almost blocked up the nostrils.

I made a *post-mortem* examination in three cases—two in which the throat was affected, and the other in which it was not. All the organs of the body were more or less diseased; the lungs almost black, the liver and kidneys partly broken up, and the intestines discoloured throughout. This last case had the most stimulants given it, and lived the longest.

CASE OF ROARING IN A FOAL THREE WEEKS OLD.

By J. Dickson, M.R.C.V.S., Dumfries.

On the 7th of August I was requested to see a foal, the property of D. Rae, Esq., farmer, Templand Hill, Kirkmahoe. On my arrival I found the animal was in a field. I desired that he should be brought up and put into a loose box, to be examined. This being done, I gave as my opinion that it was a decided case of roaring. The proprietor considered

it a hopeless case, but nevertheless requested me to do my utmost to save it. I consequently proceeded to have the larynx and upper part of the trachea well blistered.

On the 8th and 11th I again visited it, and found the blister to have taken pretty good effect, but had not acted so much as I expected. On the 17th, therefore, I applied more blister. On the 26th I again examined the foal, and found him no better, although the blister had been as severe as could possibly have been applied. On the 27th I resolved to perform tracheotomy, and had the animal so secured as was most advantageous for the operation. Having made the incision I inserted the tube, and secured it round his neck by means of a piece of tape, and, after applying a stimulating liniment to the larynx, allowed my patient to get free.

On the 2nd of September I again visited him, and applied a little more stimulating liniment. On the 7th I removed the tube, and inserted a clean one. On the 10th I again saw him, and found him going on well. On the 12th I again inserted a clean tube. On the 18th I removed the tube, in the full hope of having completed my treatment, and having made a cure.

I have visited him twice since, and find him to be perfectly sound in regard to his wind.

A FEW WORDS CONCERNING THE HORSE.

By "Humanitas."

Sirs,—In a recent number of your Magazine you allowed me to offer some remarks upon the treatment of the horse when seized with epilepsy, or similar attacks, in the streets. I now beg to call your attention, and that of your readers, to another subject having reference to the horse, demanding, as I think, investigation on the score both of humanity and expediency.

I allude to the practice of putting horses to carriage work before they are sufficiently matured for the purpose. The consequence is that they often fall ill, and are disabled, perhaps worn out long before their time. I have no doubt the experience of veterinary surgeons enables them to bear me out in this statement.

It is said that on account of the scarcity of horses adapted for carriage work, dealers and job-masters have great diffi-

culty in meeting the demands of the London season, and are compelled to bring very young horses into the service. This practice is both cruel and unwise, for, by putting the animal unduly to work before maturity is attained, strength and growth must be arrested, and the fine race of English carriage-horses will certainly be ultimately deteriorated, perhaps extinguished for all ornamental and useful purposes. I believe even now foreign horses are beginning to be largely imported into the English market.

With these suggestive remarks I will leave the discussion of the subject in the hands of your readers and correspondents, and will subscribe myself, sirs,

Your obedient servant.

To the Editors of the 'Veterinarian.'

GOOD EFFECTS OF SALT IN INAPPETENCE.

By R. J. Bolton, Veterinary Practitioner, Gibraltar.

October 18*th*, 1864.

Taking, as for years I have done, a deep interest in veterinary science, permit me to record, through the columns of the *Veterinarian*, to which I gladly subscribe, a fact which, though simple, may notwithstanding be found hereafter to be useful. It is as follows:

Not many weeks ago, I was attending a valuable horse suffering from a complete loss of appetite, for which no exact cause could be assigned, and, despite every possible effort on my part for two whole days to restore the loss, I continued quite unsuccessful. "What can I possibly now administer beyond what I already have?" were the words, more or less, that at the end of the second day I muttered to myself. I bore in recollection that nothing difficult can be achieved without a certain amount of patience, and my thoughts turned to the lines which, in my infancy, I oft repeated, viz.—

> "If at first you don't succeed,
> Try, try, try again."

Still my patient remained as before. A thought, sudden as a flash of lightning, struck me (for the information of your numerous readers, it did not, however, in the least hurt me), and, leaving my assistant in charge of the animal, I proceeded to a so-called cook's shop, and purchased, as near as I could guess, a pint of the sauce or brine in which pickled olives

are kept, to which I added a very small portion of dissolved rock salt. Returning to the stable, I immediately drenched the animal with it, and I assure you that the horse in question, which for two days and nights had refused to eat anything whatever, in *less* than an hour subsequent to the administration of this simple draught, and one probably unheard of before as a remedy, freely ate four double handfuls of bran (mashed of course), and gradually recovered his appetite to such extent that ere thirty hours had elapsed it was as good as any other horse's in the garrison.

I always knew from my boyhood that olives, as a general rule, increased the human appetite; but, until I tried this simple experiment, I little imagined that the fluid in which they are preserved possessed such a desirable property for horses.

This remedy is such a very cheap one, that it not only saves time and trouble, but also the pocket; and I beg to hope that some of your monthly readers will try the fluid, and through the same channel report its result.

I should reasonably think that in an obstinate case of loss of appetite, in the event of one pint of this liquid failing to bring about the desired result, another pint, or half a one, might be given successfully. One thing is consoling to know, I should say—if it does no good, it cannot do any harm.

I may, however, add, that on Sunday night last I was called to see a mule that refused its food—"a mule," says its owner, "that I never knew in the course of more than four years that I have had him to appear in the least regardless of his food until to-night." I instantly saw that he had been overworked, which readily accounted for his refusal to eat; but not wishing on a Sunday night to be "bothered" with clysters, &c., I abstracted from him about three quarts of blood, and gave him a pint, or less even, of my "mysterious medicine." In about half an hour afterwards I left him for the night, merely giving one or two usual instructions as a precaution—half a matter of form—and next morning the mule was eating as heartily as before. That *solely* because it was a Sunday night I did not resort to other means besides venesection, was not the case. Nearer the truth would be to admit candidly that the animal's owner is a well-known bad paymaster—so that I combine both reasons.

P.S.—With reference to the pickle or brine mentioned in the above, I beg to state that it is composed of salt and water, a little vinegar, a small quantity of red pepper, and two or three handfuls of thyme.

I merely state this lest it should not be guessed at, remarking that it is only a small portion of salt that is put into the water. The bitterness of the olives which the above fluid preserves renders the whole palatable.

THE ADMINISTRATION OF MEDICINE TO COWS SUFFERING FROM PARTURIENT APOPLEXY.

By Vincent Vine, M.R.C.V.S., Lewes.

I am induced to make the following remarks from a perusal of the communication to the *Veterinarian* of the present month, by Mr. W. P. Toll, on "Parturient Apoplexy in the Cow." We frequently hear about the treatment of disease, but not often as to the mode of administering the remedies. Mr. Toll writes that, on the 12th of November, at 8 a.m., when he saw the cow for the second time, she was "quite unconscious; the pulse was scarcely perceptible; breathing slow and deep; ears and horns cold; eyes closed; tears flowing freely; head turned back to her side, and the tongue hanging out of her mouth." He gave Mag. Sulph., Aloës, Pulv. Zingib., Ammon. Carb., in gruel, and ordered half-pint doses of brandy every three or four hours. Quite proper; but how was it given? In such a state as this it would be positively dangerous to administer medicine or anything else in the ordinary way, the powers of deglutition being suspended or nearly so.

I believe that hundreds of cows have been killed in this stage of the disease, by pouring things down their throats, that would have recovered had other means been adopted. In this stage I insert an elastic tube, furnished with a funnel at one end, down the throat of the cow, and through it I pour any quantity of medicine, &c., which may be needed. This is done without waste or causing any unpleasant symptoms.

I was led to use this simple means from a suggestion made to me by the late Major Harrison, while administering a clyster with one of Read's pumps. He remarked that there was no need for such a costly and bulky instrument, and that he would send me a tin tube which he had seen used in Italy for the giving of injections.

The tube is somewhat similar to a tobacco-pipe in form,

and I have now used it for at least eight years, and find it to answer the desired end. Reasoning upon this, I was led to employ the elastic tube here mentioned for administering medicine to cattle in the above cases, which has proved equally efficacious. Should you think these remarks worthy of a place in the *Veterinarian*, I shall be pleased.

[The necessity of administering all agents—medicinal or dietetic—to cows the subjects of parturient apoplexy, has always been inculcated in our lectures. Without doubt, as Mr. Vine observes, many animals have been destroyed for want of this precaution, the power of deglutition being nearly or entirely lost during the existence of coma. The plan advocated by him is simple, and we should think practically useful, and as such it may be made to supersede the stomach-pump in many instances.]

Facts and Observations.

Function of the Cerebellum.—Dr. Dickinson, in a paper read before the Royal Society, states his conviction that the cerebellum has nothing to do with cranium sensations, with sexual propensity, with the action of involuntary muscles, with the maintenance of animal heat, or with secretion. The only function which his experiments upon the lower animals induces him to assign to it is such as concern voluntary muscles, that receive from it a regular supply of motor influence. Hence he concludes the cerebellum is a source of voluntary power to the muscles supplied by the spinal nerves. It influences the lower more than the upper limbs, and produces habitual rather than impulsive movements. It is suggested that the outer portions of the organ may be sources of its voluntary motive power, whilst its inner layer is the means of regulating its distribution.

Respiration of Flowers.—M. Cahours observes that while the green portions of a plant under the influence of light effect the decomposition of carbonic acid, of which they assimilate the carbon while the oxygen passes off into

the atmosphere; the coloured parts thereof, on the contrary, consume oxygen to produce carbonic acid. Thus it is that the uniformity of the atmosphere, by one of nature's most admirable harmonies, is maintained.

Influenza among Horses.—For the past month this disease has assumed a very severe form among the horses in the metropolis, and many deaths have occurred, notwithstanding the early application of prompt remedial measures. Nor has the malady been confined to London or its immediate neighbourhood, but has proved equally as rife and even more fatal in many parts of the country. The mild and humid state of the atmosphere has doubtless had very much to do with the production of the disease. The phlogistic plan of treatment has been attended with the best results. Depletive measures have only hastened a fatal termination.

On Sugar and Fat as Respiratory Food.—It is believed by Dr. Hogden that sugar and fat undergo different transformations in the organism, and therefore they possess different value as food. He considers that fat, being an assimilable substance, can under no circumstances become productive of animal heat before undergoing the twofold process of constructive and destructive assimilation; but that amylo-saccharine substances are immediately passed off from the blood, and are never assimilated in the proper sense of the term. He holds that sugar and fat may be retained in the body for the same time, but they subserve distinct purposes in the economy; that they are not mutually convertible, and they ultimately pass out of the body in the form of carbonic acid and water.

The conclusions to which he has arrived from his experiments are—The amount of fat deposited in the body is regulated by the absolute and relative quantity of oleaginous and saccharine matter in the food taken. Both substances taken in a large quantity cause excessive deposits of fat.

If the fat taken be in defect, even though the sugar be in excess, no increase in the deposit of fat takes place, but rather a decrease; obviously in consequence of ordinary molecular absorption, to which the adipose, in common with other tissues, is subject, not being counterbalanced by assimilation.

If the fat be taken in excess, whilst the sugar is insufficient to meet the immediate wants of the respiratory function, still the deposit of fat may not undergo increase, but the contrary, apparently because a portion of that already depo-

sited must undergo reabsorption into the blood for the purpose of supplying heat. Fat is, therefore, as a heat-producing substance, only supplemental of sugar, which is the ordinary *pabulum* of respiration.

Prevalence of the Trichina spiralis.—It is stated that the frequency with which this parasitic worm has been found of late in the muscles and intestines of the pig, and the fatal and serious results which have attended the consumption of flesh so contaminated, has spread a panic throughout Germany, and a committee has been appointed by the Berlin Medical Society to examine and report upon the subject. Hitherto the disease has not been met with in any animal that is a vegetable feeder; but Dr. Langenbeck says that *trichinæ* have been found in extraordinary numbers in earthworms last year—as many as 500 or 600 having been observed in a worm of middling size—and these worms form part of those animals which swine devour when left at liberty. He therefore advises that pigs be always fed in sties, and thus debarred access to localities where worms are numerous.

Kaffir Superstition and Cruelty.—The Rev. W. B. Rayne, of Morley Mission Station, relates the following:—A short distance from our station a man discovered the common "lung disease" to exist among his cattle, and employed a "doctor" to "smell out" the man who had bewitched his cattle. After the performance of the usual ceremonies, the man's nephew was pointed out as the guilty person. He was immediately seized, and secured to one of the posts of the house, and a large fire made in front of him. After enduring the most frightful torture he was induced to confess—of course, to a lie. They then loosened him and dragged him to the place where he pretended to discover the poison by which he had bewitched the cattle. This is done to secure the credit of the doctor. He was then taken back, fastened again to the post, the fire rekindled, and fuel enough added to finish the work of destruction, while his friends and relatives coolly sat down outside to smoke their pipes and listen to his yells of agony.

Destruction of Epizoa.—Dr. Barth recommends benzol as a cure for any parasitical affection, such as itch, lice, ticks, in cattle, &c. He states that it has long been a means resorted to for the destruction of fleas in dogs.

THE VETERINARIAN, JANUARY 1, 1865.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

ANNUAL ADDRESS OF THE EDITORS.

"TIME passes onward with relentless wing,
And actions too, like time, may seem to pass—
To pass and be no more; but 'tis not really so."

"The New Year has come,
With a smile on its brow,
The Old Year has gone
To Eternity now."

ONCE more we are called upon to give an "abstract and brief chronicle of the time" that has passed since our last address. The poet tells us—

"It is well sometimes to pause,
And backward force the waves of time,
That now so swift and silent bear
Our restless bark from year to year."

By doing so we retrace, step by step, the ground we have gone over; and, while contemplating the path behind us, we can see if the course pursued has been such as reflection approves of, or, if it has been somewhat tortuous and rough, to avoid the causes of this for the future. It will likewise nerve us to increased energy, remembering that the time is lessening in which our work is to be done, although we are immortal until then.

This is as it should be. We repine not; indeed, 'twere useless to do so. We can look around among our compeers and recognise many who will follow us with greater zeal than we have manifested, and in a corresponding degree will be the general good derived from their labours. On the faltering footsteps of age youth presses, giving freshness to new actions, and anxiously tracking out other sources and means for acquiring and diffusing of knowledge; nor tires till time lays the enervating weight of years upon his labours, and then he yields his place up to another. Thus the round continues; thus "One generation goeth, and another cometh."

We have much to pass in review, for during the past year very much has taken place that is in consonance with our wishes, and from which we anticipate great good will eventually result to the profession.

Another milestone has been passed in our journey, and we leave the road behind us. We have much to be grateful for. Fain would we heed the advice that has been given —to cultivate a calm and candid spirit; to try to keep aloof from partisanship, and in moments of excited feeling—when others may be swept headlong by the current—to still keep upon the bank and endeavour to look at the matter as it shall hereafter appear in history. The contests and controversies of the day are very casual in their source and transient in their duration. Although the noise for a time may be frightful, we need not fear that the earth will yet be removed, nor the mountains carried into the midst of the sea, though the waters thereof roar and are troubled.

A high authority has told us that "there are epochs in the history of every undertaking when it becomes desirable to pause for a time, and, as it were, take stock; to review the progress made and estimate the amount of work done; not so much for complacency as for the purpose of forming a judgment of the efficiency of the methods resorted to to do it, and to lead us to inquire how they may be improved, if such improvement be possible, so as to accelerate the furtherance of the object or to ensure the ultimate perfection of its attainments." This these recurring periods enable us to do. In scientific undertakings such *résumés* are eminently useful, and they are sometimes forced upon us by circumstances which compel us to take a *coup-d'œil* of the whole subject, making us reflect not only on what has been done, the manner of doing it, and the methods employed for the attainment of our object in view, but also how we are to proceed so as to ensure continued success. It has been well said that we should begin the new year with a white leaf, and a trust that the chapter of life about to be commenced will contain more notable entries, a fairer sprinkling of good actions, and that the handwriting will contain fewer erasures, made in blushes, and fewer ugly blots, than any of the earlier ones. We are more than

half inclined to question the truthfulness of the statement that, for a man to be as happy as possible, he should never look back. It is true the past cannot be recalled, yet reflection often teaches a salutary lesson, and duty demands that what has been done should not only be remembered, but its experience applied for conducting the future. Retrospect may be a trial to human philosophy, but we are sure that good results from it. Mistakes are often seen, and their repetition avoided, that which is useful and praiseworthy extended, and fresh encouragement given for increased exertion, while they may be also accepted as official indices in which may be seen proofs of progress. In the performance of our duty we feel with Longfellow that—

"Not enjoyment and not sorrow
Is our destined end or way;
But to act that each to-morrow
Finds us farther than to day."

The return of these Annual Addresses gives a twofold advantage. Not only is a retrospect taken, but prospectively we are enabled to look forward to what lies before us; and while we give ourselves afresh to labour and seek for means of greater usefulness, we also urge one another to greater exertions. Were it not for these periods, we should scarcely notice the lapse of time. Dr. Johnson has said, "He that is carried forward, however swiftly, by a motion equable and easy, perceives not the change of place but by the variation of objects. If the wheel of life, which rolls but silently along, were passed on through undistinguishable uniformity, we should never mark its approaches to the end of the course. If one lane were like another, if the passage of the sun did not show that the day is wasting, if the change of the seasons did not impress upon us the flight of the year, quantities of duration equal to days and years would glide unobserved. If the parts of time were not variously coloured we could never discern their departure or succession, but should live thoughtless of the past and careless of the future; without will, and perhaps without power, to compute the periods of life and to compare the time which is already lost with that which may probably remain." How wise, then, the admonition, "Redeem the time."

We think we have before adverted to the statement of Sir William Armstrong, that the tendency of progress is to quicken progress, because every acquisition in science is so much vantage-ground for fresh attainment. We may expect, therefore, to increase our speed as we struggle forward; but however high we climb in pursuit of knowledge, we shall still see heights above us, and the more conscious we shall become of the immensity that lies beyond in the Ocean of Truth, of which all the sciences are only streams therefrom. It has been well said, "Man wants scientific truth. It can never harm him. Its brightness can injure none but the foes of human progress. Its discovery ever has been and ever will be identical with the advance of human freedom and happiness. It is the precious pearl now sought after by men of thought throughout the world. Its acquisition gives dignity to the step, calmness to the countenance, and lustre to the mind."

If in our pages we have, more than has been thought desirable by some persons, made science paramount, it is because we deem an acquaintance with it indispensable at the present day; and this not only in the pursuit of our professional avocation, but in our daily intercourse with the world. Well has it been stated that "a certain amount of scientific knowledge is now absolutely necessary to men of all ranks, and forms an essential element in a liberal education. The influence of scientific discovery is becoming daily more powerful, and is making itself felt in almost every vocation of life. Science not only succours the wounded on the battle-field, but without her powerful aid bravery is of no avail in the general nor in the ranks. The loud and fluent tongue of the pleader may seek to persuade, but without the unobtrusive evidence of the man of science it fails to convince. The tiller of the soil may labour unremittingly with his hands and waste the sweat of his brow, but his neighbour looks on smiling, and lets the steam-engine perform his work more speedily and at a smaller cost. And so it is everywhere—in the factory or mine, in the university or schoolroom, in the world of pleasure and the world of pain."

Being, then, of such general application, what is to be said of the application of its laws to medicine? Here, surely, no arguments are needed to enforce their necessity

or to show their worth. Long have they been recognised as indispensable, and evermore must they be allowed to take the foremost place, for that practice which is not founded on them is baseless conjecture at best, and in the end must fail to ensure success. Safely, too, may it be averred that he who most closely studies and applies these principles will be the most highly respected and sought for, so that in the end he will be the gainer by them. The profession also of which he is a member becomes in its turn advantaged and advanced; so that in every way it is desirable that science be cultivated and its truths made known. Especially is this the case when any division is in what has been called its infantile stage; although we are almost tired of this expression, believing the time has arrived that we should merge out of it, and grow up to manhood.

Then, again, there should be taken into consideration the satisfaction the mind receives arising from a consciousness of having acted right; although the practitioner, however conversant with principles, will always speak modestly of his endeavours, since he cannot command success, and to "err is human;" while in the system there may be going on that which is occult and therefore escapes detection. Nevertheless, he will ever take a standing high above him who is ignorant of science, since his is only chance-work.

It is true that the use of the "dialyser," and how analysis is effected by heat, and the "spectrum," might have appeared somewhat abstruse, but the discovery of these is the result of the progress science is making, and we should have considered ourselves remiss in our duty had we not noticed them. Moreover, they may be hereafter applied to veterinary medicine, and in our volume for last year proofs were recorded of the benefits resulting from dialysis, and in the present number is a suggestion for its application as a method for the detection of poisons.

It has been stated that for the promotion of science two things are essentially necessary—1st, a clear observation and right appreciation of facts; secondly, an onward effort of thought and reasoning, or, in other words, there must be distinct and general ideas applied to special and certain facts. The seemingly most trifling discovery has often led

to most unexpected and important results, as, for instance, that of the metallic base of the alkali potassa, which by extension has led to a knowledge of many others, and opened up a method of inquiry which has since been most successfully pursued. So a knowledge that flame would not pass through metallic tubes, reasoned on and worked out, led to the discovery of the safety-lamp by Sir Humphrey Davy. Or to take another illustration. It has been stated that the foot of a chamois on the sides of the snow-clad Alps, or the shout of a traveller, may perhaps cause an avalanche that shall entomb a village lying at its base. Great events often spring from but slight causes.

During the year such has been the "press of matter," that, to obviate any misconceptions that might perchance arise from supposed neglect, and to maintain the order of our arrangement, as well as to keep pace with the progress going on around us, we were twice compelled to give a double number. This long-continued support is not only highly gratifying, but it also stimulates to increased activity, so that we may merit its continuance.

"'Tis twice living to enjoy life past,"

and to be able to reflect upon duties satisfactorily performed, and then to look forward with anticipation that what has been will still be. According to Sydney Smith, those who desire to go hopefully and cheerfully through their work in life should take short views; not plan too far ahead, but take the present blessing, and be thankful for it.

A remarkable feature in the past year, the opening up, in fact, of a new era in the history of the profession, is the formation of several local or provincial Veterinary Medical Associations. We augur much good from them to the body generally. They will tend to bring about union among the members, awaken a spirit of inquiry and investigation, while a knowledge of common evils will lead to a determination to obtain their redress. In the different addresses of the presidents, at the commencement of their meetings, there is much that is suggestive, and which, if carried out, cannot fail of being productive of good. The mind-culture and antagonism resulting from these meetings will not only

awaken a free interchange of opinions leading to general advancement, but each will urge the other onwards to perfection, although it may never be attained. Truth, we are told, often springs from the healthy conflict of honest antagonisms, as a spark of fire might be caused to flash from a strong helmet struck by a keen sword. Most heartily and sincerely do we wish long-continued success and prosperity to our provincial Medical Associations. May they never lack incentives to perseverance nor a stimulus to laudable exertions, and may no internal dissentions ever arise to cause their dismemberment or to lessen their influence for good. Ever shall our pages be open to record their progress. May they also become still more numerous, till, as we have before wished, every county has its own association.

Frequently as we have urged upon our members the desirability of union, we have no wish that this should be obtained by the sacrifice of independence; this would be mere hypocrisy, and lead to dull uniformity, if not something worse. In the natural world the alternation of hill and dale, of mountain and plain, not only gives beauty to the landscape but increases the fertility of the soil; so, by varieties of minds, in their contests for truth, fresh sources of information are opened up, or old channels are deepened, and made more valuable because more capacious. Each member in the body has its respective function. "If the whole body were an eye, where were the hearing? If the whole were hearing, where were the smelling?" Diversity, therefore, is desirable, and each should so act as to give mutual support and unity to the whole. While we are advocates for union, we would also urge division of labour, believing this to be conducive to the perfecting of the whole. It may be that for some years to come this cannot be effected, and some may not see its desirability. We are, however, of opinion that much at the present day is joined to the veterinary profession that detracts from its estimation by the public and lessens its worth. On making this remark, we are reminded that while we would be void of offence to all men in the performance of our duty, nevertheless the opinions we have ventured to express have some-

times given umbrage. This we regret, for our interests are alike, and the object we have in view is the same; our endeavours, therefore, should be the realisation of that which is conducive to the good of all. The head and front of our offending has been the manifestation of a desire to bring about a union of the profession, and thus to ensure its strength, which we confess has ever been a point with us. We might have erred in our opinion as to the best way by which this is to be obtained, but we merit not censure. Our labours are not light, and a corresponding desire is awakened to perform them honestly. If a few might have been injuriously affected by our proposition—which we do not allow, since they had the means of obviating this—in the end it might have been seen that the many were advantaged. One of our statesmen has said, "It is customary to talk of the labours and anxieties of office, but labour and anxiety are light to those who believe they are doing their duty to the best of their power. That only harasses which time and opportunity prevent them from doing, while that which they are able to do is a source of satisfaction if they feel they are doing their best, and this whether their efforts are attended with success or failure."

Differences of opinion ever will exist; 'tis common to mortals, yet they should not call forth any ill feelings, far less a vindictive spirit. Each should remember that he only shares the general lot, and should be ready to forgive as he hopes to be forgiven.

> "True charity, a plant divinely nursed,
> Fed by the love from which it rose at first,
> Strives against hope, and in the rudest scene
> Storms but enliven its unfading green;
> Exuberant as the shadow it supplies,
> Its growth on earth, its fruit beyond the skies."

We are glad to see that during the past year our pages have been free from vituperative personalities. We are great friends to freedom, and in proportion as this is felt by us so is our contempt for subserviency and servile fear. On the other hand, we are advocates for order, and would readily give honour to whom honour is due; but never, we hope, shall we become men-worshippers, one of the errors, as

we think, of the present day. Thoroughly we loathe and contemn it. Were differences of opinion expressed as Messrs. Greaves and Williams have done, the profession would be great gainers. It is thus we would that evermore controversies may be conducted among us. Most of us are not slow to defend what appear to be our rights, our organ of combativeness being always sufficiently large for this, yet it would be better did the Christian precept more frequently form our governing principle.

Turn we from this to observe that it was our good fortune again to commence the year with matter in arrear, although we had not confined ourselves to the usual number of pages, and before had given to our readers all the benefits derivable from the removal of the duty on paper. We do appreciate highly the confidence thus reposed in us, and would acknowledge the continued assistance we have received ever since we have been placed on the watch-tower of the profession. May it never be lost by us, either by indifference to the performance of our duty or its neglect, but rather may we be stimulated to increased energy and endeavour.

Then, too, as it respects our correspondents, both regular and occasional, there has been no withdrawal, and to them our best thanks are given. The subject which Professor Varnell has especially selected, and which he will have made his own, namely, "The Urine and Urinary Deposits in relation to Disease," is one replete with interest. There can be no question but that the malassimilation of the ingesta often leads to alteration of the urinary secretion as well as others; but as this contains the soluble effete elements of the frame, and likewise those taken or given in excess, so in it they may be detected by the aid of chemistry, and thus a clue obtained as to the means to be resorted to to restore health; for alteration in the secretion of a gland will soon lead to its functional derangement, and that of others whose use in the organism simulates it, or for which it may have become vicarious; and altered function, long continued, will produce organic change.

We need not add in how many other ways Mr. Varnell, by his communications, has enhanced the value of our

Journal. Professor Brown and Mr. Dyer have, by their contributions, aided in the same, while Mr. Ernes has not failed to make us acquainted with what is doing among our professional brethren on the Continent of Europe.

Mr. Walker's papers on botany, if not always continuous, have been only broken in upon by some useful illustration of the application of the science to veterinary medicine. There is no contravening the assertion that the study of the structure and actions of plants, constituting vegetable physiology, has been too long neglected by us. This we have been very much surprised at, since the vegetable kingdom can scarcely be said to rank lower than the animal in the economy of nature; indeed, they are mutually dependent on each other, as the latter receive their sustenance from the former. Moreover, the investigation of one kingdom elucidates the other, and unquestionably of all divisions of science none is more capable of exercising such an advantageous influence on the mind as natural history. Let us hope that as materia medica has received its due recognition in our alma mater, botany, with which it is so closely connected, will soon find a place there. Good must result from it by its clearing up much that is vague and uncertain respecting the action of plants on animals.

"What can be less than to afford them praise,
The easiest recompense, and pay them thanks?"

The past year closed our first decade. For ten years we have been privileged to conduct the leading Journal of the profession. With what degree of success and advantage to the members thereof we must be contented to leave to them to say. Without any hesitation, we state, in reference thereto, that in our endeavours to do our duty we have received much encouragement and support, and as a proof of this with the present number we enter upon the third list of contributors to the Journal. As Editors, we have never regretted the responsibilities we undertook, but, contrariwise, are glad we ventured on the performance of the duty. At the same time we are quite conscious of the fact that they involve both labour and anxiety, but

"The labour we delight in physics pain,"

while the kind and continued support of our friends gives

us encouragement to go on. As yet we have not realised Lord Byron's statement—

> "You know what ills the author's life assail—
> Toil, envy, want, the patron, and the jail"—

nor have we any fear we shall. The contents of the last volume we believe to be as varied and as interesting as the preceding ones. It really seems but as the other day the first number of this periodical made its appearance. We remember it well, but little then thought we should ever become its Editors.

There is no questioning the fact that at the present day the "press" is a mighty engine for good or evil. By it knowledge is becoming general, and its diffusion liberalises while it expands the mind; it also refines and elevates it, so that the man who has been rightly instructed can derive no real pleasure in mere sensuous gratifications, but he soars higher, and in mental employment finds the greater solace and satisfaction, always avoiding all extremes.

Although our necrology has not been so lengthened as heretofore, yet many have gone hence with whom we were wont to hold intercourse, and whom we had known as students. To ask the reason why, would be in vain, yet it may not be without some profitable result.

> "And what are we?
> Above our broken dreams and plans
> God sets, with wiser hand than man's,
> The limits of his destiny."

"Death to the good man," says an eloquent writer, "appears not as an intrusive and hideous monster, the progeny of sin, but as a quiet and gentle departure in peace. It is the finished vessel launched into her native element. It is the eagle soaring from earth to his eyry in the rock. It is the dewdrop rising toward the sun, whose rays attract it. It is the child going home. It is the sun set in the clouded west, passing into sunrise in the glorious and everlasting east. It is the soul that ascends. It is the body that rests in the grave; and even it rests there not for ever, but till the resurrection day." Soon, too, we must travel alone the path "which no fowl knoweth, and the vulture's eye has not seen;" and when lodged in

the house appointed for all living the worm will sweetly feed upon us, and we be remembered no more. We know that all must die, but each alone. Friends may minister to our wants while living, and wipe the brow and upbear the dying head; but when the last tie is severed, the last groan uttered, and we embark upon the unknown future, they must leave us to pursue our voyage alone through the valley.

Thus we close our Annual Address. Our labours have been constant and anxious, yet agreeable, for reasons already assigned. It may be, however, that all has not been done that might have been, and we agree with the sentiment expressed by Longfellow when he says—

"Men may rise on stepping-stones
Of their dead selves to higher things."

We will not say that all has been realised which we from the first anticipated, or that all the promises made to us have been fulfilled. "A landscape without shadow is false to Nature and to Art; the real wisdom is to measure, even by the depth of that shadow itself, the abundance and power of the sunshine." And with the amount of this we must say we have had grounds for being well satisfied. If some have failed, others have more than compensated the loss; and looking back over the past, bright and irradiated spots may be seen, and hope looks forward with confident anticipation of many more being in reserve for the future. We have no despondency. The support and encouragement hitherto given us will, we feel assured, be continued. May it be even exceeded, since mutual will be the resulting advantage.

Our desire has ever been to do our duty. We court not empty fame, but rather an approving conscience. We may have failed; if so, it is our misfortune, we hope it is not our fault. Deeds rather than mere words we have inscribed on our banner, for we

"Like the quiet lightning deed,
Rather than the applauding thunder at its heel,
That men call fame."

Still, we would leave behind us some proofs of our sincerity, some indications of our endeavours to do something towards the advancement of the profession. These endeavours are in part before our readers, by whom, we are happy to be able to add, they have not been unappreciated.

Extracts from British and Foreign Journals.

LIEBIG ON THE USE OF SEWAGE.

Liebig on the Use of Sewage.—The utilisation of sewage is a subject that has naturally awakened much thought and consideration. There can be no doubt that the use of excreta constitutes one of the circles in which nature works, therefore should the place of deposit be where the constituents thereof may be appropriated and rendered available for the wants of animals and of man. In the wise economy of nature nothing is lost. How best that which is so desirable can be effected is a problem which even the present age finds it difficult to solve. We feel sure it will not be asked, What have we to do with it as a profession? since the answer is obvious. We had marked for insertion several articles on this subject, it being one that has lately been bronght prominently before the public. The state of our pages, however, precludes their insertion; and we are obliged to content ourselves with the following observations by Baron Liebig—extracts from a letter addressed by him to Lord Robert Montagu:

"The natural laws which govern the permanent fertility of soils and the increase of the produce are, from circumstances which I cannot detail here, very little understood by the British farmers; and hence arises a fear that the use of sewage, which ought to be a lasting benefit to agriculture, may be regarded after a few years as a veritable detriment by the same farmer who in the first years of its application would assuredly give it his full approbation. In what may be termed its natural state sewage is not a universal manure like stable dung, which is efficacious at all times, and on all localities, but a special manure, the continual application of which exclusively tends to impoverish the land.

"Stable dung contains all, a special manure only some, of the elements which ought to be restored to the soil in order to render it permanently fertile. Peruvian guano, for instance, belongs to the class of special manures; and experience has shown that in certain countries of Germany and Scotland the application of guano on meadow land, which produced in the first years enormous crops of grass or hay, had later no effect at all; and that the same man who at first over-rated the value of guano eventually cursed its application. Sewage contains ammonia, potash, and phosphoric

acid, like guano, but phosphoric acid in a much smaller proportion. On a soil rich (in its natural state) in phosphoric acid, sewage will have an excellent effect. It will produce, for instance, large crops of grass, turnips, and corn, if the soil supplies the quantity of phosphoric acid wanting in sewage; but as in each successive crop a certain quantity of phosphoric acid is abstracted, the total quantity in the soil is by continual application of sewage gradually diminishing every year, and a time must arrive when the phosphoric acid is insufficient for further crops, and when sewage ceases to produce its former effects.

"By having the turnips eaten on the field, the soil (by the solid and liquid excrements) is exactly manured as if irrigated with a number of tons of sewage (containing the elements of voidings of the sheep); and the farmer knows that at the beginning of a new rotation he must manure his field with phosphates, in order to get the former crop of turnips, corn, &c., in succession. The same field could not be rendered equally fit to furnish the same quantity of produce in a new rotation if it was manured year after year by the voidings of sheep only—or its equivalent of sewage, which would be the same thing.

"By the increase of his crops in the first years by sewage irrigation only, the farmer, ignorant of the natural law, would be led to believe that the same effect would continue, and that he could dispense with other manures altogether—except, perhaps, with the stable dung which his farm produces. But he would be mistaken; and on discovering his error, as he would soon do, the revulsion of feeling caused by it would be most baneful. The agriculturist must be made aware that by the introduction of sewage his whole system of farming undergoes a change, and that he has to make an apprenticeship to learn to apply it rightly and economically, and in order to benefit, and not to injure, his fields.

"If the agriculturist is left without proper instruction on this head, the labours of years of men like yourself, Dr. Brady, and others, would be lost. It would take a long time to recover the lost ground. When I think of the possibility—indeed, I may say the probability—of this occurring, that the millions necessary to realise the proposed scheme should be expended in vain, that the great and important example of England should thus be lost to Europe—I confess that my anxiety on the matter is very great. It would be one of the greatest misfortunes that could happen should this contingency really occur. Every means, there-

fore, must be employed to prevent any misunderstanding, to clear up any false view regarding the sewage, and to guard against all error in the application of it. To you, therefore, my lord, I write on the subject; being sure you will give it your most serious consideration, and be willing to devise means for averting the threatened evil.

"If clearly understood and properly managed, the employment of sewage will prove a blessing to agriculture; and those who, by unwearied perseverance, have at last seen the consummation of their labours, may justly be looked upon as the benefactors of their fellow-men. But loud would be the outcry should the agriculturist, either by his own ignorance or the want of forethought in others, find himself misled. Our name would then become a bye-word, and instead of gratitude be recollected with a curse. There are two things which must be done. First, it must be made intelligible to all, that sewage in its natural state does not replace stable dung in its entire efficacy; and that, if used exclusively, it will produce abundant crops only for a time. Secondly, that for each crop the composition of sewage ought to be corrected according to the nature of the soil, by adding those ingredients which are wanting in sewage, and which the plants to be grown require in the largest proportion."

Very lately a large deputation, representing the towns of Birmingham, Nottingham, Derby, Wolverhampton, Coventry, Preston, and Bath, has waited upon the Home Secretary, and urged the Government, through him, to bring in a bill to empower corporations to carry out works for the utilisation of sewage. Sir George Grey said that the Government were seriously considering the subject; and from his remarks it was inferred that it is intended to introduce a definite measure into Parliament during the course of next session.

A SUGGESTION ON THE DETECTION OF POISONS BY DIALYSIS.

By Dr. A. T. Machattie, F.C.S., &c., Glasgow.

Read at the Meeting of the British Association at Bath.

The general importance of the process of dialysis, for the separation of crystalloid substances from complex organic mixtures, is so well known as to render it unnecessary for me to refer to it at this time. The suggestion which I am

about to lay before you has reference principally to the difficulty of detecting poisons when mixed with the heterogeneous contents of the stomach or intestines of the animals to which they may have been administered; and, unquestionably, one of the most important applications of dialysis consists in the detection of poisons by its means in the animal system after death.

Experiments have been already made with the ordinary hoop dialyser, in which parchment paper acts as the membrane or septum to such an extent as may satisfy all of the simplicity and value of the process of dialysis, both in the detection of poisons and in investigations on physiological chemistry; but, when experimenting lately with a common dialyser, it occurred to me that in some cases it might be of advantage to employ the animal organ itself as the dialyser, using the coats of the stomach or intestines as the membrane or septum, and in this way avoid interference with the organs themselves until they had been subjected to investigation. This can the more readily be done since the exterior of the stomach of animals is seldom coated with any appreciable amount of fatty matter, and, therefore, the whole preparation necessary seems to be to thoroughly wash the exterior of the stomach or intestines to be examined; for thereafter the organ may be at once exposed to the external action of pure water, as in the commonly pursued methods of dialysis. This manner of separating poison need not entirely prevent the previous examination of the interior lining of the stomach, provided that the opening be made so as to enable the stomach to be afterwards suspended in water without mechanical leakage. The intestines of an animal supposed to be poisoned seldom require to be opened throughout their entire length, and accordingly a portion of them left unopened may be tied firmly at each end, washed carefully, and exposed to the external action of water for twenty-four hours, or longer, if necessary, in the usual way.

I regret that want of time has as yet prevented me from testing this process thoroughly, to see how far it may be considered any improvement on the common method of working; but certain preliminary experiments which were made to determine the practicability of the method now suggested may be mentioned.

(1) Into the reticulum or honeycomb bag of a sheep were placed three grains of arsenious acid, partly dissolved, but principally suspended, in one ounce of water. The organ was then carefully washed with distilled water, and afterwards almost completely immersed in ten ounces of water,

contained in a glass beaker. At the end of twenty-four hours the liquid in the beaker was greenish in tint, due to the colouring matter of the grass with which the various stomachs of the sheep were nearly full when the animal was killed. One half of the liquid, or about five ounces, was treated with hydrochloric acid, which caused a precipitation of white flocculent matter. The acid liquid was filtered from this precipitate, and then saturated with hydrosulphuric acid, when a slight precipitate of tersulphide of arsenic was obtained. Another portion, tested by Reinsch's process, gave abundant evidence of the presence of arsenic. No evaporation of the external liquid was required in either instance.

(2) Into a portion of the duodenum of the same sheep one half of a grain of arsenious acid was placed, dissolved and suspended in water, as in the preceding experiment. This part of the duodenum, after being washed, was tied at each end, and suspended in eight ounces of water, in such a manner as to keep the tied ends entirely out of the water, and so prevent the contents from escaping by any opening that might still exist. The liquid became greenish, as in the first case, and after twenty-four hours yielded arsenic by Reinsch's process; but no appreciable precipitate was obtained by treating the liquid with hydrochloric and hydrosulphuric acids.

(3) Three grains of strychnine dissolved in one ounce of water, with the addition of a few drops of hydrochloric acid, were added to the contents of the osmasum or manyplies of the sheep; and when suspended in water for twenty-four hours, as before, strychnine was detected in the external liquid. In this instance, however, it was necessary to evaporate the liquid; and as the presence of organic matter prevented the application of the colour tests for the alkaloid, ether was required to separate the strychnine in a state pure enough to be recognised. Bichromate of potash and sulphuric acid gave evidence of the strychnine by the characteristic violet tint, and the bitter taste was easily observed.

The above experiments are not adduced as in any sense conclusive of the value of the suggestion now made for the detection of poisons, but they show that arsenic and strychnine pass readily through the walls of the stomach and intestines of a dead sheep; and considering that the structure of the stomach and intestines of the higher animals is very nearly alike in all, and that so many of the commonly used poisons are crystalline like the two selected for experiment, it may safely be assumed that other crystalline poisons

may be detected in other animals in a manner precisely similar to that described above.

The quantity of poison used in the above experiments is large—larger than what may be expected to occur in the body of many poisoned animals; and it is therefore possible that with minute traces of poison this process of detection might fail. On this head I can say little or nothing as yet, having had no opportunity of pursuing the investigation to any length; but I hope to be able soon to vary the experiments, and satisfy myself whether the process can be considered an improvement on those already known, or even advisable in practice at all. One remark may be made on the time of exposure. The only limit in this respect appears to be the length of time before putrefaction takes place. Twenty-four hours is probably the minimum which should be trusted, and the maximum time will depend on the temperature and season, because putrefaction will more or less rapidly destroy the dialysing membrane.

In conclusion, it appears to me that many problems in physiological chemistry might be better elucidated by the process just suggested than by using an ordinary hoop dialyser. In discovering, for example, what portions of the contents of the stomach or intestine of an animal pass through the walls of the organs with the greatest rapidity, it would surely be better to take the stomach or other organ exactly in the condition in which we find it in the animal, and, without unnecessary mixture of, or interference with, its contents, and also without any exposure to air, which must produce some change, treat it with water externally at once, and thus prevent the influencing of the results by unnatural treatment, which cannot be avoided in the usual process.—*Chemical News.*

PROFESSOR GAMGEE AND DISEASED MEAT.

A LARGE and influential meeting of farmers, cattle-dealers, feeders of stock, and others, was lately held in the upper room of the Corn Exchange, Grassmarket, to hear a statement from Mr. Swan, cattle-dealer, with regard to alleged interference by Mr. Gamgee with his sales. Mr. Hope, Fentonbarns, was called to the chair, and among the other gentlemen present were—Mr. Henderson, of Longinddry; Mr. Curror, of Comiston; Mr. Hunter, of Haugh; Mr. Begbie, Queenstonbank; Mr. Gibson, Woolmet; Mr.

Forman, Duncrahill; Mr. Proudfoot, Inveresk; Mr. Scott, Norton; Mr. Melvin, Bonnington, &c. &c.

The Chairman said that the meeting had been held for the purpose of hearing a statement from Mr. Swan, who had been in the habit of sending large numbers of cattle to Glasgow for sale. Mr. Swan had found that the animals, even after some of them had been sent to Greenock, had been watched by the detectives and the police, very much to the annoyance of the purchasers; and, on making inquiries, Mr. Swan had found that instructions had been telegraphed from Edinburgh to watch these animals, and he had also learned by whom these instructions had been sent. He then read the following communications on the subject:

"CHAMBERS, 39, NORTH CASTLE STREET,
"EDINBURGH; *November* 28, 1864.

"SIR,—We have just had a meeting with our clients, Messrs. John Swan and Son, cattle-agents, complaining of the manner in which their sales are interfered with by the police in the Glasgow market, and stating that the consequences are not only damaging their trade as salesmen, but extremely hurtful to their feelings. Messrs. Swan are far from attaching the slightest blame to you or to your officers, as they are satisfied that you would not have adopted the steps resorted to without specific information having been furnished to you; but as they are satisfied that such information has been given from hostile motives, they, for their own protection and in duty to their employers, feel called upon to require of you to furnish us with copies of such letters or other communications as have been forwarded to you in connection with their trade, and upon which your instructions to your officers were based.

"We trust you will see fit to comply with the request.

"We are, &c.,
"HORNE & ROSE.

"Mr. SMART, *Chief Constable.*"

"CENTRAL POLICE CHAMBERS,
"GLASGOW; *December* 5, 1864.

"GENTLEMEN,—I have to acknowledge receipt of your favours of date the 28th November last and 2nd December current.

"The request made by you is of rather an unusual kind; and while I told Mr. Swan that it was on information from Mr. Gamgee my officers acted, I made no promise to furnish him with copies of telegrams sent by Mr. Gamgee, but referred him to the telegraph office.

"I will, however, have the whole papers looked out, and submit them to the magistrates along with your letters.

"I am, gentlemen,
"Your most obedient servant,
"JAMES SMART, *Chief Constable.*

"Messrs. HORNE & ROSE,
"39, North Castle Street, Edinburgh."

The following letter was also read at the meeting:

"CHAMBERS, 39, NORTH CASTLE STREET,
"EDINBURGH; *December* 6, 1864.

"DEAR SIR,—We send you a copy of our letter of the 28th November, and Mr. Smart's answer just received, in reference to Mr. Gamgee's interference with your trade.

"If you have any meeting to-morrow, you may read these letters to the gentlemen present; and we think that a committee might be appointed to co-operate with you in probing this matter to the bottom, and thereafter reporting to a subsequent meeting to be called to consider what steps should be taken to protect the interests of the trade.

"Please to return Mr. Smart's letter to us.

"We are, &c.

"HORNE & ROSE.

"Messrs. JOHN SWAN & SONS,
"37, Lauriston Place."

Mr. Swan said he might state that he believed telegrams had been sent to Glasgow regarding cattle sent through there for some weeks. But the week he complained of most was at the beginning of November. On that occasion he sent through a special train with 140 head of cattle from Edinburgh to Glasgow, and they consequently arrived a considerable time before the ordinary train. On the arrival of the ordinary train detectives were in waiting, and asked for Mr. Swan's cattle. They were told that they had come by special train, and they then asked if many of them were diseased-looking. Next morning, being the market day, four officers came into the cattle-market to watch the cattle. They staid until the market was closed, and so many of the cattle were sent back to Edinburgh. In the afternoon a number of cattle came from Belfast, and the officers followed them to Sighthill, and telegraphed to Mr. Gamgee that a number of Mr. Swan's diseased cattle had been sent back; and Mr. Gamgee sent a message to Mr. Wilson, the inspector, ordering him to rise out of his bed and look after these supposed diseased cattle. Mr. Wilson said it was not his duty to do so. By such conduct as that fair trading was very much interfered with, and he threw himself into the hands of breeders of stock to have such unwarrantable proceedings put a stop to. He might say distinctly that he asked Captain Smart the result of this very minute inquiry as to disease, and the reply was, that there was not a diseased beast in the whole. However, by this allegation he (Mr. Swan) held that the cattle were sold for £200 below their real value in consequence of the watching by the detectives. Mr. Steele, flesher, Greenock, had bought three animals from them at £15, and word was sent to him to Greenock that they were

suspected of being diseased. Mr. Steele was afraid to kill and sell them, and sent a message to him (Mr. Swan), to which he sent back a telegram, saying that the cattle were bought as sound and paid for as sound, and that there need be no scruples about selling them. If that was to be allowed to pass, he did not know how business was to be carried on. In fact, he believed that were such men as this Gamgee stationed at Glasgow, Aberdeen, Inverness, and Dumfries, there would be nothing but ruin to the dealers and to every man who had the misfortune to be the owner of a sheep or a bullock. Mr. Gamgee had deceived the Government and had played upon the Privy Council, was kicked out of the House of Commons in the greatest disgrace, and again he had come down ——

The Chairman.—You should not say anything more in regard to that.

Mr. Swan.—Some of our magistrates have taken notice of him, and he has been brought in to give evidence here. Really, I think this very oppressive.

The Chairman.—Mr. Curror has suggested that there should be an action against the magistrates of Glasgow.

Mr. Swan.—I do not know. For the last twenty-two years, I think, my character will bear me out, and I will give the magistrates of Edinburgh and Glasgow every assistance in my power to keep down the traffic in diseased meat; but allowing such interference with fair trade I think in the highest degree objectionable.

The Chairman said he might suggest that the meeting should recommend Mr. Swan to prosecute the case for the damage he had received, and that the feeders of stock should subscribe to raise funds to carry on the action.

After some desultory conversation—

Mr. Swan said he did not want money so much as that the matter should be made public. Captain Smart, of the Glasgow Police, who was a first-class man, had been imposed upon as the Privy Council had been. He would not like to prosecute the magistrates of Glasgow; but what he wanted was to get this conduct of which he complained put a stop to in some way or other.

The following gentlemen were appointed a committee to consider the case:—Mr. Hope, of Fentonbarns; Mr. Curror, of Comiston; Mr. Milne, Niddry; Mr. Melvin, Bonnington; Mr. Dudgeon, Almondhill; and Mr. Hunter, jun., Haugh.

The meeting then adjourned.—*Edinburgh Daily Review*.

REPORT OF EXPERIMENTS MADE UNDER DIRECTION OF THE LORDS OF THE COUNCIL AS TO THE VACCINATION OF SHEEP, AND AS TO THE INFLUENCE OF SUCH VACCINATION IN PREVENTING SHEEP-POX.

By James F. Marson, Esq., F.R.C.S., Resident Surgeon of the Smallpox Hospital, and

Professor Simonds, of the Royal Veterinary College.

(*Continued from p.* 845, vol. xxxvii.)

Dr. Wm. Budd, of Clifton, in a paper read before the British Medical Association, at its annual meeting in 1863, referring to the idea that vaccination gives temporary security, says, "There is, indeed, evidence to render it probable that for some weeks after vaccination sheep are somewhat less prone to take *clavelée*—sheep-pox—in the natural way; but there is clearly nothing specific in the protecting influence. Louis has remarked that typhoid fever hardly ever occurs in persons who may at the time be the subject of any other morbid disturbance. The two facts are probably of the same order."

The numerous experiments performed by ourselves in the course of this inquiry, as well as those had recourse to in Wiltshire, and those legitimately adopted in Norfolk, in 1848, all negative the idea of vaccination affording temporary security to sheep against smallpox.

We may likewise state that modern Continental authorities attach no value to the vaccination of sheep as giving either permanent or temporary protection.

Besides, if the vaccination of sheep were protective against sheep-pox, it could not be rendered practically useful unless sheep themselves could be made, like the human subject, to produce material for their own vaccination; for it would be impossible, or next to impossible, to procure lymph from man or from the cow in quantity enough to vaccinate the large number of sheep which would require to be done *immediately* on the occurrence of an extensive outbreak of sheep-pox.

This difficulty will be more apparent when we state that we were only enabled, from the whole of our vaccinated sheep, to obtain sufficient fluid for use upon seven sheep, and that when so used it produced no action in any one of the animals.

Referring to the general subject of vaccination, Dr. Budd remarks that "It, as we all know, offers a specific protec-

tion against human smallpox, which is all but complete; against ovine smallpox it offers no specific protection at all. It has been proved by experiments on an enormous scale, performed under every condition to ensure accuracy, that vaccinated sheep, when afterwards exposed to the infection of *clavelée*, take the disease in large proportion in the natural way; and that, when inoculated with it, they not only incur the usual consequences, but suffer quite as severely as unvaccinated sheep. Until evidence to the contrary shall arise, the conclusion then seems to be inevitable, that variola ovina and human smallpox, closely as they resemble one another, are of distinct species. They are as two kinds of thistle—as one sort of mushroom to another sort—or as two species of algæ—like almost to identity in looks and outward guise, identical in all their laws of growth and being, but yet specifically different.

Finding that our vaccinations had so completely failed, we resolved to give trial to the *inoculation* of some of the sheep with the virus of human smallpox, and for this purpose 100 were selected, and six punctures used in each.

We were led to the performance of these experiments in consequence of the near approximation in the nature of variolous diseases as they are known to exist among animals, and of the capability of these diseases being transmitted occasionally by inoculation from one animal to another of a different species, thus giving it security for a time against its own smallpox, as well as that belonging to another animal; as, for instance, in the transmission of cow-pox to the human subject.

There is, however, always a difficulty in transmitting an exanthematous affection, apparently of the same kind, from one animal to another of a different species, although it can be propagated readily enough among animals of the same species; while from the numerous failures which occur we might now and then be justified in concluding that some creatures are entirely insusceptible to a virus which easily acts on others. Modifications of the malady are, however, more generally obtained, these being chiefly referable to the peculiarity of organism.

The results which followed from the inoculation did not materially differ, either locally or constitutionally, from those which had been obtained from the previous vaccinations.

Thus, of the 100 sheep alluded to as being inoculated, 30 only gave evidence of the introduction of the virus. Of these 30, two were tested with the counter-proof of *ovination*, and both of them contracted the sheep-pox, and one died.

Two others were exposed to the natural disease, and took it, and both of them died.

Among other things we were anxious to ascertain whether the sheep which had been successfully inoculated with human variola would prove susceptible to the action of the *vaccine* virus, for which purpose ten of them were subjected to a subsequent vaccination, two of which became affected by it, and to an extent as great as others not inoculated.

Of the number of punctures and scratches made in inoculating sheep with human variola, ten per cent. only had effect, this nearly agreeing with the results obtained from vaccination. Thus, taking the whole of the punctures and scratches together, and which amounted to many hundreds in vaccinating the sheep, we found that only 13 per cent. of them gave any evidence of the introduction of the vaccine virus.

The preceding facts not only show the inutility of *inoculating sheep with human variola* to protect them against the sheep-pox, but also that the virus has no special action upon their organisms, as they are still open to the influence of the vaccine, as well as their own particular disease.

In continuation of this report it is necessary that we should refer to certain statements which have appeared in the public papers from Mr. Overman, of Weasenham; Mr. Allen Ramsay, surgeon, of Shelford; Mr. Sprague, surgeon, of Kimbolton, and others, relative to the vaccination of sheep in this country.

In the year 1848, in particular, sheep-pox, as has been previously stated, prevailed to a very great extent in the eastern counties, and continued to do so, with more or less severity, down to the middle part of 1850. The serious losses which were sustained led to various means being tried to check the extension of the disease, both by surgeons, veterinary surgeons, and agriculturists. Foremost among the latter was the late Mr. Henry Overman, of Weasenham, Norfolk, who professed to have protected his flock by vaccination. (?)

At the "Launditch Association," held at Litcham, Norfolk, October 4, 1848, Mr. Overman is reported in the local papers to have said—"That when the disease first made its appearance in that part of the country, he conceived it to be his duty as a letter of rams to endeavour to send them out as safe and free from disease as possible. He tried vaccination, and on the 18th and 19th of July he had 860 sheep vaccinated. He was pleased to think he had done so, for out of

that number he had not had a single loss from smallpox. Subsequently he had had twenty score lambs also vaccinated, as he was so sanguine as to the result, and no flock could be more healthy than his was. It was impossible for the smallpox to appear after vaccination; or, suppose it did, it reached its height in six or eight days, while in the natural way it would not reach its height until the fourteenth day. He had let one of the rams to Mr. Farrar, of Sporle. The smallpox was raging in the flock, and a man was inoculating the sheep at the time. This sheep which had been vaccinated did not take the disease."

These remarks, coming from such a source, gave a great impetus at the time to vaccination, and many farmers who had hitherto depended chiefly on keeping their animals as much as possible from infected flocks now had recourse to the operation. The statement, however, was rather too boldly given; and accordingly Mr. Perry, V. S., of Swaffham —the person alluded to as being engaged in inoculating Mr. Farrer's sheep—forwarded a letter, dated October 8th, 1848, to the *Norwich Mercury*, in which, after quoting Mr. Overman's remarks with regard to the healthy state of his flock, he asks—"Now, what does all this prove? Are there not scores of flocks in this country that have not been vaccinated, the owners of which might say the same? Does this in the most remote way imaginable prove that vaccination is an antidote to smallpox? Did Mr. Overman place these said sheep with others infected with smallpox, and allow the animals to herd together in common? No, he mentions nothing of the sort; he merely adds 'no flock could be more healthy than his was;' but the healthiness of Mr. Overman's flock is no proof that the sheep are not liable to take the smallpox, if exposed to it."

Referring in particular to the ram sent to Mr. Farrer's, Mr. Perry says—

"As soon as the animal arrived at Sporle he was lodged in a house, that he might not come in contact with any other sheep. He did not take the disease in a natural way, as it is termed—and why? Because, like Mr. Overman's other sheep, he was not exposed to the infection. On the day after his arrival at Sporle a lamb-tup was selected as his companion; and, at the request of Mr. Overman on that day, I *inoculated* his down-tup. The lamb was also inoculated at the same time. Both animals were immediately removed to a remote part of the farm, away from all other sheep.

"On the eighth day the down-tup had smallpox develop-

ing as well as it possibly could be. It is true he had the disease in a mild form, but not more so than I have seen thousands have it that have never been vaccinated. The lamb did not show the disease till the twelfth day; and although the eruption was more extensive, the constitutional effects were almost equally mild. The animals continued to go through the various stages of the disease until they had entirely recovered."

Confirmatory of Mr. Perry's statement is the fact that Mr. Simonds saw this tup at Sporle on October 16th, 1848, and made the following note in his memorandum book:

"Mr. Overman's tup."—"Inoculated in the right thigh. Affords ample evidence of having had variola rather severely. An enlargement of the absorbents exists near to the place of inoculation, and also a sore covered with a scab. On the inner side of the fore legs several pustules and small ulcers are still present."

Besides this instance of the non-protective power of the so-called vaccination to which Mr. Overman's sheep had been subjected, we are enabled to state that two more of his sheep were sent to Mr. Muskett's, of Rougham, whose flock at the time were suffering from natural smallpox. Both these sheep were inoculated while on the farm—one by Mr. Cook, farmer, of Litcham, and the other by Mr. Baldwin, V.S., of Falkenham. Both sheep took the disease, and one died.

Notwithstanding this circumstance, Mr. Overman, from his real knowledge of the disease being so very imperfect, affirmed, in a letter published in the *Norwich Mercury*, bearing date August 10th, 1848, that the sheep sent to Mr. Muskett's did not take the disease from inoculation. His words are—"I am satisfied that neither of them have taken the disease, but they have a hard callous substance formed at the part immediately connected with the insertion of the ichor."

With reference to this statement, we may remark that the local effects here spoken of can only be regarded as affording good evidence of the success of the inoculation.

It is necessary now to explain that Mr. Overman's sheep had all of them been operated upon by a Mr. Wells, a medical practitioner of Swaffham, *and that probably not more than a dozen of them had been, in reality, vaccinated with current vaccine lymph.* For his so-called vaccinations, Mr. Wells is said to have used a "*sherry-coloured*" fluid, which he carried about from farm to farm in *ounce-phials nearly filled.* Some of the correspondents of the local papers described it as probably consisting of an irritating agent mixed with "gum

water."* Mr. Overman himself admitted to Mr. Simonds that a fluid was used on his sheep by Mr. Wells, but that a dozen of them were done with "*points*;" and that he could not discover any difference in the local action produced by this system of vaccination and that adopted by Mr. Wells.

In continuation of Mr. Overman's vaccinations and of Mr. Wells' proceedings, we have to state that, in consequence of a natural outbreak of the sheep-pox in July, 1848, the latter-named person was engaged to *inoculate* the sheep belonging to Mr. Muskett, to whose farm Mr. Overman's two sheep, previously alluded to, had been sent. There is, however, in reality, a great doubt whether, even in Mr. Muskett's case, all the animals were properly done with the virus of sheep-pox, inasmuch as Mr. Simonds, who examined the flock no less than *three weeks* after the professed inoculation, found many of them in the earliest stage of the *natural* disease, and giving no signs of inoculation.

PROCEEDINGS OF THE VETERINARY MEDICAL ASSOCIATION.

OFFICIAL REPORT.

TUESDAY Evening, November 14th, 1864. Professor Varnell, President, in the chair.

Abstract of a lecture delivered by Professor Tuson, entitled "Experimental Illustrations of the best methods of detecting Arsenic in cases of Poisoning by that Agent."

The lecturer commenced by observing that he proposed, from time to time, to lay before the association an account of the general circumstances connected with, and of the results derived from, the investigations upon which he is frequently engaged, relative to actual or supposed cases of poisoning of domesticated animals.

By so doing the lecturer conceived that he should be furnishing the members with useful information on an important, but somewhat neglected, branch of veterinary science; and hoped that he might be the means of implanting in the minds of his hearers correct views upon a subject about which many otherwise well-informed veterinary surgeons and others had wrong or imperfect notions, viz., the powers of chemical analysis as an auxiliary in toxicological inquiries.

It was intended in this lecture to explain and experimentally demonstrate the simplest and most trustworthy means of discovering and identifying arsenious acid—a substance which is more

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* See Mr. Edmund Oldfield's letter to the *Norwich Mercury*, November 29th, 1848, and also Mr. William Smith's letter to the *Norfolk News*, December 7th, 1848.

frequently resorted to than any other for the purpose of poisoning man and the lower animals.

To detect arsenious acid remaining in the ingesta or egesta, a portion of the contents of the alimentary canal of a calf was placed in a tall narrow jar, through which a current of water flowed until it passed away quite clear and transparent. By this contrivance the specifically light ingesta and egesta were removed by the flowing water, while the arsenious acid, in virtue of its slight solubility and great weight, sunk to the bottom of the jar. That the substance which collected at the bottom of the jar was arsenious acid was proved—

1. By its being a white glistening powder heavier than water.
2. By its exhibiting, when viewed by the microscope, fragments of an octahedral shape, or of forms derived from the octahedron.

   (With the assistance of a microscope, a diagram, and a clay model of an octahedron, which was afterwards sliced in various directions, the crystalline characters of arsenious acid were elucidated.)
3. By its subliming, without melting, and by the sublimate, which collected on the cool sides of the tube in which the experiment was made, possessing the microscopic characters above related.
4. By its slight solubility in water, even at the boiling temperature.
5. By its boiling aqueous solution on cooling, or its cold aqueous solution on evaporation, yielding perfect or abortive octahedral crystals.
6. By its cold aqueous solution—
   a. Giving a yellow precipitate with ammonio-nitrate of silver.
   b. Giving a green precipitate (Scheele's green) with ammonio-sulphate of copper.
   c. Acquiring a yellow *colour* on being mixed with hydro-sulphuric acid, and subsequently furnishing a yellow precipitate on the addition of hydrochloric acid.

The amount of arsenious acid remaining in the contents of a stomach or intestines may be too small to be discovered by the above-explained process; when this happens, the presence of the poison can be ascertained by the method invented by Reinsch and described hereafter.

Attention was next directed to a description and exhibition of the modes of discovering arsenic in the tissues of organs, and of small quantities of the poison when mixed with fluid or semifluid organic matters. By boiling with distilled water the tissues of organs, *e. g.* the coats of a stomach, part of a liver, &c., containing arsenic, solutions are obtained which cannot be used for the application of the ammonio-nitrate of silver and other liquid tests already named, for the reactions produced by these tests upon the small amount of arsenic which might be dissolved in the water would be masked by the chemical and physical effects which they would simultaneously o ccasion upon the animal matters coexisting in such solutions.

It follows, therefore, that other processes must be resorted to when seeking arsenic contaminated by, or in combination with, solid or liquid organic bodies. In accordance with the title of the lecture, out of several processes invented for this purpose, Professor Tuson selected for illustration those which he considered can be most conveniently employed, and which at the same time furnish trustworthy results when due care and precaution are taken.

Reinsch's process.—This method is applicable to the discovery of arsenic in all kinds of organic matters. If a portion of an organ is under examination, it is boiled with pure, strong, hydrochloric acid until this reagent ceases to dissolve the tissue, and the solution formed is diluted with three or four times its bulk of water, and filtered. If the subject for analysis be in a liquid or semi-liquid condition (*e. g.* the contents of the alimentary canal, vomited matter, &c), it is to be rendered perfectly fluid by the addition of water. The resulting liquid is mixed with one fifth of its bulk of strong hydrochloric acid, boiled for about half an hour, and filtered. The filtered solution, whether derived from solid or liquid organic matter, is next boiled with a strip of bright copper. If arsenic is present in the organs, contents of stomach, &c., submitted to experiment, it deposits on the copper as a gray incrustation.

The coated copper is removed from the liquid, dried, and strongly heated in a small, dry, test-tube. The copper remains fixed, while the arsenicum (metallic arsenic) is vaporised and transformed by union with atmospheric oxygen into arsenious acid. The arsenious acid thus formed condenses on the cool sides of the tube, and may be recognised by the microscopic appearances and chemical qualities referred to in an earlier part of the lecture. Dr. Guy's mode of condensing and collecting arsenious acid for optical examination on microscopical covering-glass was likewise shown.

Marsh's process—This method, which enables us to detect and demonstrate the existence of very minute quantities of arsenic, can only be applied with advantage to arsenical preparations in a comparatively pure state, or when they are mixed with small quantities of organic impurities. Accordingly, endeavours have been made to so treat organic matters as to prevent their interfering with the production of the indications of arsenic in them, as afforded by the method invented by Mr. Marsh. The most successful means of avoiding the interference here alluded to, is that recommended by Dr. A. S. Taylor, and consists in thoroughly drying the organic matter, grinding it to powder, or cutting it into small pieces; covering it with strong hydrochloric acid, leaving the mixture in a warm place for twenty-four hours, and distilling it to dryness. The fluid obtained by distillation contains arsenic, deprived of all but a small proportion of the organic matter by which it was originally invested, and may now be tested for that poisonous agent by Marsh's process, in the following manner :—

Zinc and hydrochloric acid were introduced into an apparatus so constructed as to cause the hydrogen liberated from the mixture to flow through and from a glass tube drawn out to a jet. On igniting

the hydrogen as it issued from the jet, and depressing cold porcelain and glass on the flame produced, also on strongly heating a portion of the tube through which the gas flowed, no deposits were obtained, thus indicating that the zinc and hydrochloric acid were free from arsenic.

Subsequently, a few drops of a liquid obtained from the coats of a stomach containing arsenic, by the distillation process, were poured into the apparatus described in the preceding paragraph, and the gas evolved again examined in the manner there mentioned.

Gray metallic deposits now formed both on porcelain and on the sides of the cool part of the tube, between the point heated and the jet. These deposits were proved to be metallic arsenic by that on the porcelain rapidly disappearing when powerfully heated, and when acted upon by a solution of chloride of lime; and by that in the tube becoming converted by sublimation in the presence of air nto arsenious acid, which could be recognised by the microscopical and chemical peculiarities already referred to.

Reference was also made to the ingenious modification of Reinsch's test devised several years ago by Professor Morton.

The chemical principles involved in the foregoing processes were fully explained, and the methods illustrated, by the lecturer applying them to portions of liver, coats of stomach and contents thereof, taken from a calf recently poisoned by arsenious acid, and whose stomach was exhibited at a previous meeting of the Association. The lecturer likewise showed how the purity of the chemicals used in his experiments was to be ascertained, and pointed out the nature and object of the precautions which it is always necessary to observe when testing for arsenic. Professor Tuson concluded by directing special attention to the fact that, inasmuch as hydrochloric acid, zinc, and copper usually contain arsenic, the purity of these reagents must invariably be thoroughly established before they are employed in the detection of an arsenical poison. The analyist who, from ignorance or thoughtlessness, neglects such precaution, may—1. Be betrayed into concluding and reporting that arsenic was present where none existed; 2. Induce a wrong cause to be assigned to the death of an animal; 3. Have his professional reputation seriously damaged by the discovery and publication of his error; and 4. If the commission of such error be undiscovered, cause innocent persons to be suspected as administers of the poison, which might lead to their imprisonment, loss of character, and ruin.

LANCASHIRE VETERINARY ASSOCIATION.

OFFICIAL REPORT.

The members of the Lancashire Veterinary Association held their ninth Meeting, at the Brunswick Hotel, on the evening of the 8th of December, 1864, the President in the chair. The minutes of the last meeting having been duly read and confirmed, Mr. Smith and

Mr. Nuttall were elected members of the Association. The following gentlemen were then nominated:—Mr. Woods, by Mr. Lawson; Mr. T. Billington, by Mr. Gibson; Mr. Paulden, by Mr. Howell; Mr. Buckley, by Mr. Howell; Mr. Alfred Challoms, by Mr. T. Taylor.

The Secretary then read letters of apology from those gentlemen who were unable to attend, after which, the President called upon Mr. Howell to read his paper on Puerperal Fever in Cattle.

The subject was handled in a most able and practical manner, and was followed by a very animated discussion, in which most of the senior members took part. There were many interesting facts brought forward, and some very contradictory evidence given, though at the same time there were several gentlemen who had had remarkable success, some even quoting the mortality of the cases as low as 20 per cent. but the percentage ranged from that to 90. However, taking the average of all the statements, the success attending the treatment was highly satisfactory. The discussion had to close at ten o'clock, there being a considerable amount of business to transact before the members retired.

After a vote of thanks had been awarded to Mr. Howell for his essay, and duly acknowledged, the Treasurer read the financial report, which was very satisfactory.

Mr. Lawson next, in a very appropriate speech, proposed a vote of thanks for the able services rendered by the retiring President, Mr. T. Greaves, during one of the most eventful periods the Society had, or perhaps ever would experience, and also for the judicious manner in which he had conducted the various meetings he had been called upon to preside over.

The motion was seconded by Mr. Haycock, and carried with acclamation.

Mr. T. Greaves responded, and then proposed a vote of thanks to the Secretary and Treasurer, for the very able assistance he had received from them, to which Mr. T. Taylor responded.

Mr. T. Greaves then proposed Mr. P. Taylor as his successor to the presidential chair.

Mr. P. Taylor begged to decline, and would himself propose an amendment to the effect that Mr. Simpson, being an old and esteemed member of the profession, was the most fit and proper person to be the President. This was seconded by Mr. Haycock. Upon which Mr. Simpson rose, and said, that he had already distinctly and positively refused the post of honour, and must reiterate that refusal; therefore he begged to second the original proposition of Mr. Greaves, that Mr. P. Taylor be elected President for the ensuing year. The motion being put to the meeting, was carried unanimously. Mr. P. Taylor returned thanks for the honour conferred on him.

Mr. T. Taylor then proposed Mr. Gibson as his successor to the secretaryship, which was seconded by Mr. Haycock, and carried.

After the usual thanks, Mr. P. Taylor proposed Mr. Simpson as Treasurer, which was seconded by Mr. Haycock, and carried unanimously.

Mr. Gibson then proposed the following gentlemen as Vice-presidents for the ensuing year, viz., Mr. T. Greaves, Mr. J. Greaves, and Mr. Howell. The proposition was seconded by Mr. P. Taylor, and carried.

Mr. Surmon then proposed the following gentlemen to form the Dinner Committee; Mr. P. Taylor, Mr. J. Lawson, Mr. T. Greaves, and Mr. Gibson. The motion was seconded by Mr. Hampson, and carried.

It had been arranged that the Annual Dinner should take place on the first Wednesday in February, but it was afterwards left open to be settled between the President and the Dinner Committee. It was finally settled that it should take place on the second Wednesday in January, to bring it as near as possible to the ordinary festive time.

It was arranged that the President would deliver an inaugural address before the dinner.

ALEX. L. GIBSON,
Honorary Secretary.

Veterinary Jurisprudence.

WAKEFIELD COUNTY COURT.

(*Before* T. H. MARSHALL, Esq., Judge.)

ACTION UPON A WARRANTY.

CAWTHRA *v.* ARMINSON.

THIS was a plaint to recover £19 10*s.*, as damages, for that the plaintiff, on the 13th of May, purchased from the defendant a horse, which the defendant warranted to be good and sound, whereas it was not sound. The plaintiff is Enoch Cawthra, farmer, of Tong, near Bradford, and the defendant Richard Arminson, farmer, of Warmfield. Mr. Hutchinson, jun., of Bradford, appeared for the plaintiff, and Mr. Gill for the defendant. The case occupied some time, but the facts may be briefly stated.

On the part of the plaintiff the case was, that on the 13th of May, he purchased from the defendant, at Barnsley fair, a horse for £23 10*s.*, the plaintiff receiving a warranty signed Richard Arminson, Warmfield, to the effect that up to that day the horse was sound and a good worker. The plaintiff, however, found that the horse did not eat; but he did not know that anything particular was the matter with it, and at Huddersfield, where he took the horse, he found that it left its food in the shape of a sop at the bottom of the manger. He subsequently put it to grass, but it did not get on as he thought it should, but he did not know that anything particular was the matter with it. On the 19th of May, he showed it at Adwalten fair, and sold it for £24 10*s.* to Mr. John Hollins, farmer and carrier, of Eccleshill, and he gave him the warranty, but

he did not tell him that the horse could not eat hay and hard corn, for he was "green" in the matter, and he thought it would come round right. Mr. Hollins found that the horse was unsound, and on the 17th of June said that he would return it. The defendant was thereupon communicated with by the plaintiff; and on the 29th of July he and Mr. Hollins saw the defendant, and he said that he would come over and see the horse, and if it was not right he would take it back. He, however, did not keep his promise, and therefore the animal was examined by Mr. Carter, a veterinary surgeon, and on his certificate that it was a "quidder" (a disease in which the animal treats its food as tobacco chewers treat their quid, turn it over in the mouth and put it out), he again wrote to the defendant, informing him that if he did not fetch the horse back it would be sold by auction, and he would be sued for the loss. The defendant took no notice still, and the horse was accordingly sold, when it realised £6 10*s.*; and that taken from the £23 10*s.*, £1 10*s.* for keep, 10*s.* 6*d.* for the veterinary surgeon's fee, 5*s.* for the auctioneer, and 5*s.* for bills, left a balance of £19 10*s.*, for which the defendant was sued.

Witnesses having been called in support of this statement, *Mr. Gill* submitted, in defence, that the horse was sound when sold, and that it was in consequence of the carelessness of the plaintiff when the horse shed one of its teeth that the disease had been caused. Mr. Gill called as witnesses the defendant, Mr. Ingram, steward to Col. Smyth, M.P. (from whom Mr. Arminson purchased the horse), Mr. Lodge, farmer, and two servants in the employ of the defendant, all of whom proved that the horse was in good condition, and not at all affected by the symptoms which had been described, and Mr. Arminson proved that he sold the horse, not from any defect, but because he had at that time more than he required to perform the work of his farm.

Mr Naylor, veterinary surgeon, was next called, and he said that he saw the horse on the 12th of May, and he examined it, but did not look into its mouth, and it was then sound; and certainly, in his opinion, it was not a "quidder," for its condition was good, and much better than it could have possibly been if it had been suffering from that disease.

There was manifestly a very great difference of opinion, as to the question whether it was possible when the horse was sold that it could have been unsound, between Mr. Naylor and Mr. Carter (who were both examined); and *His Honour*, under the circumstances, declined to give a judgment until he had taken the opinion of a skilful veterinary surgeon in London, or of the College of Veterinary Surgeons; and he said the party against whom he gave judgment would have to pay for that opinion.

Mr. Gill and *Mr. Hutchinson* agreed to this on behalf of their respective clients, and the case was adjourned until next court day.—*Wakefield Express*, Nov. 26th, 1864.

A SITTING of this Court took place yesterday, before Mr. T. H. Marshall. *His Honour* gave judgment in the adjourned case of "Cawthra, of Tong, *v.* Arminson, of Warmfield." The plaint was to recover £19 10*s.* on the warranty of a horse, which it was alleged was unsound when it was warranted. *His Honour* having taken the opinion (on a somewhat knotty point) of Professor Spooner, of the Veterinary College, London, gave a verdict for the plaintiff.—*Leeds Mercury*, Dec. 14th, 1864.

[We have been favoured with the following evidence on the above case.]

For the Plaintiff.—Mr. Joseph Carter, Veterinary Surgeon, of Bradford, examined the horse carefully on August 12th, 1864, and swore upon oath that he examined his mouth with his hand; found the fourth and fifth molar teeth on the near and upper side decayed on the outer edge, and twisted inwards, leaving a vacuum, or cavity betwixt the cheek and teeth, which was filled with masticated food emitting a very offensive smell; this he removed with his hand, but as soon as the horse masticated any hard food, it was very soon filled up again so as to prevent him masticating properly. Examined his incisor teeth casually as to age, and by their appearance on August 12th, said he was five years old off, but on cross-examination, would not swear on oath that he might be only four years old off; swore that a horse had all his molar teeth fully developed at four years old, and that the disease could not have arrived at that stage in less than three or four months, perhaps more.

For the Defence.—Mr. Martin Naylor, Veterinary Surgeon, of Wakefield, swore that he had been attending a mare which had met with an accident belonging to the defendant a little prior to May 15th. On May 12th the defendant asked him casually to look at the black horse, and tell him what he was worth, as he intended showing him at Barnsley fair next day. Saw him trot out in the yard, ran his hand down his fore legs, but not his hind legs; never looked into his mouth, but swears on oath that he was no quidder on that day, although he never looked in his mouth, but by the appearance of his coat looking sleek, he says he could not be a quidder at that time; swears that the sixth molar teeth are not through the gums at four years old, and that a horse changes his molar teeth between four and five years of age.

COURT OF EXCHEQUER, DEC. 13TH.

(*Before* Mr. Baron MARTIN *and a* Common Jury.)

BUCKINGHAM *v.* ROGERS.

Mr. Huddleston, Q.C., and Mr. Barnard appeared for the plaintiff, Mr. Henry James and Mr. Talford for the defendant.

This was an action for a breach of warranty on the sale of a horse. The horse in question, with others, was sent to Rugely fair, and sold on the 2nd of June, by the defendant, on behalf of Lord

Shrewsbury. According to plaintiff's evidence, the horse was taken ill on the 7th of June—five days after the sale—and died on the 27th of July, being eight weeks all but one day after the purchase. No notice was given to the defendant until a fortnight after the death of the horse.

Mr. Lavender, a farrier who attended the horse during his illness, was called for the plaintiff, and stated that he made a *post-mortem* examination of the horse, and found that the *lungs*, *liver*, and *spleen* were in a very bad state. In fact they were "*rotten*," and must have been diseased previously to the 2nd of June.

Mr. Vines, Veterinary Surgeon, was next called, also on the part of the plaintiff. He said that he had not seen the horse during life, but had examined a portion of a *lung*, *liver*, and *spleen* said to have been taken from the horse in question. In his opinion the disease of the lung was of recent date. It might have taken place in a week; but he considered the disease of the *liver* and *spleen* to be of longer standing. The disease could have taken place in these organs in a month or five weeks. It might have existed longer, even seven or eight weeks. There were abscesses in the liver as large as a pullet's egg, and the spleen was much enlarged. He thought the disease must be of more than a month's standing.

On the part of the defendant, evidence was given to show that the horse had no "panting of the flanks," or other symptoms of disease of his liver, or lungs, and that he worked well up to the time of sale.

Mr. Carless, Veterinary Surgeon, stated, that he had frequently seen the horse, and the last time, only two days previously to his being sold. At that time he was quite sound. He believed that the disease spoken to by plaintiff had taken place since the sale. That if it had existed at that time, or before, symptoms indicating such would have been present.

Professor Varnell, of the Royal Veterinary College, who attended to watch the evidence, quite agreed with what Mr. Carless had stated. He was decidedly of opinion that the disease had commenced after the horse came into the possession of the plaintiff, and that its development was favoured by a hot stable and change of food and management.

His Lordship, in summing up, remarked, among other things, that when a man sells a horse with a warranty, and gives his name and address, he is entitled to receive a notice if the horse was unsound, that he might get some one to look at it.

The jury found a verdict for the defendant.

ARMY APPOINTMENTS.

War Office, Pall Mall.

Charles Felix Phillips, gent., to be Acting Veterinary Surgeon, *vice* Francis Walker, promoted to the Royal Artillery.

NEW MEMBERS OF THE PROFESSION.

At a meeting of the Court of Examiners of the Royal College of Veterinary Surgeons on the 20th ult., the following pupils passed their examination, and received the diploma of the College:

William Giltro, Hampstead, Middlesex;
Alexander Floyer, Weedon, Northampton;
Richard Wyer, Folkingham, Lincoln.

OBITUARY.

Veterinary science has sustained a great loss by the death of P. J. S. Verheyen at the comparatively early age of fifty-eight. This event took place at Brussels on the 20th of October last. M. Verheyen had been honoured by the King of the Belgians with the Order of Leopold. He was director of the Veterinary School of the State; veterinary inspector of the Belgian Cavalry; member of the Royal Academy of Medicine; president of the Agricultural Society of Brabant, &c.

Verheyen studied veterinary science at the School of Utrecht, and was appointed veterinary surgeon to the Dutch Artillery in 1829. At the separation of Belgium from Holland he transferred his services to his own country, and was appointed veterinary surgeon to the 2nd regiment of *Chasseurs à cheval*. The same year he was appointed veterinary inspector to the Belgian Cavalry. In 1840 he received the appointment of professor and director of the Veterinary School of the State, at Wreghemlez, Bruxelles. In 1856 he obtained the decoration of the Order of Leopold.

Verheyen was the author of the *Hippiatrique Militaire*, and also the founder of the *Journal Vétérinaire*, edited by the professors of the Veterinary School at Brussels. He was also the corresponding member of the *Recueil de médecine vétérinaire d'Alfort;* besides which he contributed to the new *Dictionary of Veterinary Medicine and Surgery*, published by Messrs. Branley & Reynal. He also contributed a great many articles of undoubted merit to other works.

We have likewise to record the death of Mr. Harry Burt, M.R.C.V.S., Lewes, Sussex. His diploma bears date May 1st, 1856.

THE

VETERINARIAN.

VOL. XXXVIII. No. 446. FEBRUARY, 1865. Fourth Series. No. 122.

Communications and Cases.

CASES OF DISEASE OF THE BLOOD-VESSELS OF THE HORSE.

By Professor Varnell, of the Royal Veterinary College.

Within the last few weeks several cases of disease of the blood-vessels of the horse have come under my notice; from among which I have selected four, that I am desirous of briefly recording in the pages of the *Veterinarian*. They are as follows:—1st. Rupture of the abdominal portion of the posterior vena-cava. 2nd. Rupture of one of the jugular veins. 3rd. Aneurism of the posterior aorta; and 4th. Aneurism, complicated with rupture of the posterior aorta.

Lesions of this kind, as far as I know, are of rare occurrence in veins, while in the arteries they are common, much more so than perhaps many pathologists suppose. The pathology of these morbid changes, as well as the causes which give rise to them, and the effects they may have upon the adjacent structures, require much careful investigation; a task, however, which I have no intention of undertaking in the following remarks, but merely to notice a few of the most salient points connected with their history.

Death from Rupture of the Posterior Vena Cava.

This case occurred in the practice of Mr. Thomas R. Scruby, M.R.C.V.S., of Royston, who wrote to me as follows:

"Royston; *Nov.* 12*th*, 1864.

"Dear Sir,—Subjoined are the particulars of the *post-mortem* appearances of a horse I examined this morning. They are, I imagine, of rather an unusual nature.

"The animal was a great favorite, and about twelve years old. He had been lying still for about a month in a large yard, being under treatment for 'false quarter.' On Friday night last he was fed as usual, and nothing was observed to be amiss with him; but when the man went to work on the following morning he was found dead, having apparently died without a struggle.

"Upon opening the abdomen it was *quite full* of fluid, of a sero-sanguineous nature; and on removing the intestines, which were healthy, and letting out the fluid, the first thing that struck me was the different appearances of the right and left lobes of the liver, the right presenting the appearance of a mass of coagulated blood. On the anterior surface of the organ, the peritoneum, was torn transversely throughout its whole extent; a coagulum of blood about an inch thick existed upon the lobe, while the lobe itself was a black pulpy mass, and easily broken down; the other lobe was healthy but pallid.

"On examining the vessels I found that the posterior vena cava, where it is joined by the hepatic veins, was ruptured to the extent of fully four inches, but the coats of the vessel did not appear any thinner to the naked eye where the rupture had taken place than anywhere else. The heart was perfectly empty, and there was no blood in the chief vessels of the body, coagulated or fluid. When I first opened the cava I expected to find an aneurism; but, as you know, lesions of this kind are principally confined to arteries.

"Should you consider this case of sufficient interest, I shall be glad to have your opinion as to its cause, &c.

"I am, &c.

"Thomas R. Scruby.

"To G. Varnell, Esq."

The above description, as will be seen, is more brief than the importance of the case would demand, a circumstance which I have to regret. It would have been instructive to have known something of the condition of the vessel, not only at the point of rupture, but throughout its entire course; and also whether the other large veins which communicate with it either directly or indirectly were or were not diseased. It would also have been interesting to know the condition of the organs adjacent to the vein at the site of

rupture. If disease existed in an organ in this region, it might, by its action, have weakened the walls of the vessel, and thereby rendered it likely to give way by any undue force, either from distension from within, or from being overstretched during some unusual exertion. But as no disease is alluded to by Mr. Scruby, we must infer that none existed.

Death from Rupture of one of the Jugular Veins.

The particulars of this case were communicated to me by Mr. Richardson, M.R.C.V.S., and V.S. to 1st Royal Dragoons. This singular accident occurred to a troop-horse in his regiment, and under the following circumstances :—The horse, on being led out of the barrack stables, accidentally stumbled and fell, with his head doubled underneath him, so as to bend his neck sharply round. He was immediately released from this position, notwithstanding which he died in a very short time; his death being preceded by violent struggles and great agony.

Mr. Richardson made a *post-mortem* examination very soon after the horse was dead, and discovered that the jugular vein on the side of the neck which was convex when the accident occurred, was ruptured immediately below the inferior part of the parotid gland. The effusion of blood which had taken place into the areolar tissue, was extensive, and caused considerable tumefaction around the seat of the lesion.

Mr. Richardson further informed me, that the jugular vein on the opposite side of the neck had been impervious to the passage of blood for some time—the result, as we may infer, of the operation of phlebotomy—and he thought that this had much to do in causing the rupture of the other vein. In this opinion I fully concur; and I also think that a due consideration of this fact, and the circumstances connected with this lesion, materially enhance the value of the case, and make it the more important that it should be placed on record. I will now offer a few remarks, which, although somewhat speculative, may nevertheless have some bearing on the causes, both remote and immediate, of the rupture of this vein.

The jugular veins being the chief conduits of blood from the head of the horse, the loss of one of them would, of course, entail a greater duty, or an increase of the functions of the other; and the horse would necessarily suffer some inconvenience, especially when his head was in a dependent position, as in feeding from the ground. The other veins of the neck would, however, without doubt, gradually become larger, so

as to accommodate themselves to the increased quantity of blood they had to carry, and in this way compensate in part for the loss of function of the jugular. Increase in the diameter of the veins, under such circumstances, is not, however, the only change they undergo, for they become longer, and necessarily more tortuous in their course. These peculiarities I have observed on several occasions, particularly with the superficial veins of the side of the head and neck of a horse in which one jugular is lost; and, as before stated, they are most marked when the animal is feeding from the ground, or when undergoing severe exertion. With reference to these tortuosities I may remark, that the convex part of the vein-wall is thinner at every bend than the concave part of the wall. This state of the vein is caused by the force of the current of blood, and in some instances varicosities are thus produced. The jugular vein, however, does not lengthen so much as to create the necessity for its course to be altered, but it nevertheless increases in size, and its coats become much thinner and weaker than natural. If this vein becomes much increased in its diameter, the valves in its interior would be disarranged, and many of them be insufficient, either by their free edges not meeting, or their structure becoming cribriform, to prevent a reflux of the blood; and thus, to a great extent, support to the wall of the vein is lost. Such morbid changes as these cannot but render the vein predisposed to rupture should any extreme exciting cause come into operation. But besides a cause of this kind, it is by no means uncommon for a pouch to be found on the outer wall of the jugular vein, the result of phlebotomy. Such dilatations vary much in their size, but I have seen them even larger than a walnut. The outer wall of such pouches would be simply formed by the outer fibro-cellular coat of the vein, the middle and inner coats not having united. Sometimes two or three of these pouches exist in one vein, as the result of so many bleedings; but since bleeding has gone out of fashion, or the necessity for it has decreased, these lesions are correspondingly fewer in number. It is stated that this horse died suddenly, but in great agony. The question now arises as to the immediate cause of death. Was it from actual loss of blood, or from pressure upon the upper part of the air-tube, or from the blood not being duly returned from the brain? The inquiry is important, both in a physiological and a pathological point of view. In the first place, I cannot understand that so much blood could escape out of the circulation as would cause death; no opening in the skin being observed through

which it could pass. That which flowed out of the lacerated vein would only find its way into the areolar tissue in the immediate vicinity of the opening of the vessel, and this quantity could not be very large.

Secondly. Could the effused blood interfere with the function of respiration? I can understand that it might do so. The areolar tissue, which is abundant in the region of the upper part of the trachea, the larynx, and pharynx, would, by becoming filled with effused blood, press upon the boundary of the glottis to an extent that might produce an arrestation of the function of respiration, leading on to death, which would almost of necessity be preceded by convulsions, as such are usually observed in animals that die of suffocation.

In the third place, the jugular veins, being the principal channels for the return of the blood from the brain, we should, *à priori*, expect that great cerebral disturbance would take place from an impediment to the current of blood through them, and such undoubtedly existed in this instance. Indeed, seeing that both veins were obstructed, it would be difficult to understand how the horse could long survive, even if the breathing had not been arrested, or the actual loss of blood been sufficient to cause death. The vertebral veins, and others of less calibre, could not, on a sudden, become sufficiently enlarged for the purpose of returning the blood, and hence, in my opinion, engorgement of the veins of the brain. And perhaps, also, a rupture of their coats might take place, and lead to death from apoplexy. Such are the views that I am disposed to take with reference to the several causes which might have produced the death of the animal, but I am, nevertheless, of opinion that suffocation from pressure is the most probable.

The importance to be attached to the normal permeability of the jugular veins, and also the weakened state of their coats, produced by phlebotomy, are points well worthy of our consideration when determining the soundness or otherwise of horses.

Aneurism of the Posterior Aorta of the Horse, associated with disease of the Vertebræ.

The particulars of this very interesting case were forwarded to me by Mr. George Lewis, M.R.C.V.S., Monmouth. They will be found detailed in the following letter.

"Monmouth, *Dec.* 28*th*, 1864.

"Dear Sir,—I send herewith a portion of the posterior aorta of a horse, being part, I believe, of an aneurismal sac. The portion sent is a transverse section of the vessel. The

entire sac would have contained fully three pints of blood. There was a much larger amount of fibrinous deposit on the inner portion of the sac than is now to be seen. You will observe a small crucial incision which I have made on the inner side, and that opposite to this there are some depositions of earthy matter. The posterior aorta, throughout its whole course, was studded in a similar manner with these deposits.

"Will you kindly inform me what you think of the specimen? Should you consider it of sufficient interest I will forward you full particulars of the case.

"I am, &c.

"To Professor VARNELL."

On the receipt of this letter I wrote to Mr. Lewis for further details, as the nature of the specimen rendered the obtaining information with reference to the previous history of the horse very desirable. To this inquiry I received the following reply:

"MONMOUTH, *Jan. 4th*, 1865.

"DEAR SIR,—I beg to forward you the particulars of the case, together with a brief history of the horse from which the diseased aorta was taken,

"His sire was an old horse, not free from infirmities, and his dam an old mare, which had been blind for many years, and had also been fired on both fore legs.

"The animal under consideration was a gelding, four years old; colour, bright bay; height, fifteen hands, two and a half inches; and, when a yearling, was a remarkably fine colt, and took two first-class prizes at local agricultural shows. He continued to thrive until he was about two years old, when he ceased to do well, and the owner was, as he said, 'disappointed in him.'

"In the spring of last year he was broken to saddle and harness, and was kept at work afterwards. During this time his hocks became 'curby.'

"In 1862 I was consulted about a bony enlargement upon one of his fore legs, which did not yield to treatment. At this time he was in good condition, but presented a 'leggy' appearance, and had badly-shaped hind legs. He seemed also to want stamina, as his owner remarked. I was informed that whenever the animal was mounted he bent his back in a peculiar way, and walked with a straddling gait, appearing to be weak in the loins. For more than twelve months he had been observed not to be in good spirits, being 'mopish' and 'stupid.'

Having been requested to fire the animal over the curbs, I prepared to do so by having him kept without his morning feed, and as the ground, from the frost, was very hard, I selected a place in the fold yard to cast him. He made a few struggles only during the operation, and at the proper time was set free, and allowed full opportunity to rise. He made an effort to do so, and, in the attempt, fractured the dorsal vertebræ. The sound of the fracture was distinctly heard by those who were present. I informed the owner of the nature of the case, and that the horse was worthless. He expressed himself in the most gentlemanly manner, as being satisfied that it was an unavoidable accident. He was desirous, however, of allowing the poor animal a few hours' respite, and that I should see him again. It was now evening, and therefore we determined to place the animal in as comfortable a position as circumstances would permit, and leave him for the night. Early the next morning I drove over and had him destroyed.

"The *post-mortem* disclosed a general healthy condition of the viscera, excepting the abdominal portion of the aorta. Near to the cœliac axis, an aneurismal sac had formed, which would contain three pints or more of blood. Upon the inner coat of the sac a large amount of fibrinous deposit was present, especially upon that portion forwarded to you. So great was the amount of this deposit, that it appeared as though Nature had said, 'Here is an injury, and I must hasten to repair it.'

"Two of the dorsal vertebræ, situated immediately over the aneurism, were also found to be fractured *longitudinally*.

"The aorta was studded with calcareous deposits, and was also of very unequal thickness throughout its entire length.

"There was no appearance of the animal being infested with parasites.

"Having witnessed the effects of aneurisms upon surrounding tissues, and even upon bones, and taking into consideration the previous history of this animal, the *post-mortem* appearances, together with the peculiarity of the fractures, I was induced to make a careful analysis of the fractured vertebræ, which I here subjoin:

Organic constituents	56
Phosphate of lime, with a little phosphate of magnesia, and fluoride of calcium	38
Carbonate of lime	4·5
Soluble salts	1·5
	100

"In concluding this note I may state, that in the *Lancet* of the 6th ult., Dr. Greenhow is reported to have shown a specimen of abdominal aneurism in man, in which the spine was entirely surrounded by the tumour, and its bony structures much absorbed.

"I am, &c.

"To Professor VARNELL."

It has been thought by some pathologists that aneurism of the large arteries of the horse is of rare occurrence when compared with man. How far this is correct I am not prepared to say, but I can state, from my own experience, that many cases occur in the horse. They are even far more numerous in the ass, a fact which is verified by examples so frequently met with in the dissecting-room of this institution. Among the latter-named animals, as well as among the former, to what extent they may be produced by *entozoa* (strongles), we have no statistics to show. In the specimen sent to me by Mr. Lewis, there is no positive proof that these parasites were the cause of the aneurism; still, that they may have primarily laid the foundation for this disease, is very probable. I carefully examined the specimen, but could not detect the slightest trace of any of these creatures, either in the lymph adhering to the inner surface of the diseased artery, or in the structure of its coats, or in the small points of calcareous matter deposited in various places beneath its serous membrane.

The principle features in the specimen are, the structural alterations that have taken place in the coats of the vessel, and its increased capacity at this particular part, for, according to Mr. Lewis's statement, the aneurismal sac would hold no less than three pints. In some places the wall of the sac was much thinned, while in others it was even thicker than natural. In its thinnest parts both the inner and middle coats seemed to have entirely disappeared, leaving the outer or fibro-cellular coat only, which, however, seemed to be somewhat thicker than natural. In those parts in which the coats were the thickest, the increase of substance apparently depended upon a deposition either upon or beneath the serous lining membrane of the vessel; but in some places I could not detect any membrane covering the deposition. The deposit was opalescent, firm to the feel, and arranged in patches. Imbedded in its structure there were points of calcareous matter, some of which were as small as a pin's head. Others, however, were much larger than this, and were scale-like in form. These deposits I examined carefully

with the microscope, for the purpose of ascertaining if the remains of any entozoa or any ova could be detected within them, but I was not successful in finding any traces of these. It will be seen, by referring to Mr. Lewis's letter, that calcareous deposits were found to exist here and there throughout the entire length of the posterior aorta, so that we may consider this artery as being affected with atheroma as well as aneurism. But what could have induced these morbid conditions in so young an animal is very difficult to determine.

Taking into consideration the age of the horse when he was first observed not to thrive (namely, at two years old), the idea of parasites being the primary cause of the disease in the artery receives some support, although no trace of these creatures could be detected in the *post-mortem* examination. Even, however, had such been the case, I do not see how the atheromatous condition of the vessel is to be explained. Further investigation may, however, decide this question.

It may likewise be suggested that the disease of the artery was partly induced by a hereditary taint, as may also have been the peculiar character of the bone, whereby it became predisposed to fracture, for, according to the analysis, its constituents were not relatively normal. It would have been satisfactory if the bone had been examined microscopically as to its structure, more especially as it appears that in one hundred parts of the fractured bone, forty-four only of earthy materials we represent, whereas about seventy-six parts is the average amount in normal bone. The small amount of bone-earth in this instance approaches to that found in bone affected with *rickets*, which fact will go a great way to account for the occurrence of the fracture during the operation. With regard to the period when the bones absolutely gave way, it is not important to discuss, nevertheless it is gratifying to find that the owner of the animal took a rational view of the accident. That such it was no doubt can exist, and therefore a similar accident might occur to any horse when under an operation.

With reference to the case quoted from the *Lancet*, I should think that the condition of the bones was different from that spoken of by Mr. Lewis. In the former instance I should suppose that their bulk was greatly reduced by absorption, the result of pressure imparted by the aneurismal tumour, while in the latter I can conceive that the bone tissue was weakened by a defect in its normal constituents.

Aneurism of the Posterior Aorta, with rupture of its coats, causing death by hæmorrhage.

This case occurred in the practice of Mr. Thomas Wells, M.R.C.V.S., Norwich, who briefly communicated the particulars to my colleague, Professor Simonds, who, being desirous that a record of such cases should be kept, furnished me the details. Mr. Simonds also placed in my hands the specimen of the diseased artery, which he received from Mr. Wells.

It is somewhat singular that the horse from which this diseased artery was taken, together with two or three others which the owner had lost only a very short time before from a similar cause, was located very near to a district which was known by Mr. Simonds to afford cases of this description as long since as 1831.

It appears that the animal in question died about the time Mr. Wells arrived, so that he had no opportunity of observing the symptoms. He was enabled, however, to make a *post-mortem* examination, which showed that the immediate cause of death was internal hæmorrhage. Further investigation developed the cause which gave rise to the bleeding; an aneurismal enlargement of the abdominal portion of the posterior aorta at the point where it gives off the anterior mesenteric artery, was found to exist, which, from the extreme attenuation of its coats, had given way, resulting, of course, in speedy death. Strongles were found to be present in this artery in considerable quantities, and were, no doubt, the cause of its diseased condition. The remarks I shall make on this case are but few; nevertheless, I feel that in recording the fact, I am, even in a statistical point of view, doing good, as any information which can be collected on the subject of entozoa is valuable, more especially if accompanied with a knowledge of the locality and character of the soil where these creatures abound. The extensive practice which Mr. Wells has so long conducted would, I feel confident, yield a fund of information on the subject of parasitic diseases, which, if recorded, could not fail to be of great use both to the profession and the public at large.

As long ago as 1812 Mr. W. Robinson, of Tamworth, had noticed a diseased condition of the aorta and mesenteric artery, associated with parasities, and ending in rupture. This case he has described in the *Veterinary Record* for 1850, vol. vi. It is, I believe, the earliest case of the kind which is recorded.

A very remarkable case is also published in the *Veterinarian* for 1833, vol. VIII, page 73; in which a large aneurismal sac was discovered at the root of the anterior mesenteric artery in making a *post-mortem* examination with a view to discover the cause of the death of a horse. The sac was found to be adhering to the colon, at which point the walls of both organs had become partially removed, so that an opening existed between the artery and the colon, through which the blood passed into the intestine to an extent to cause speedy death. It is also a valuable fact that further investigation showed that a large number of worms were existing within the diseased blood-vessel. (See case.)

INFLUENZA AMONG THE HORSES IN THE METROPOLIS.

By W. Ernes, M.R.C.V.S., London.

This affection has prevailed more or less extensively since the latter part of last autumn down to the present time. In some cases a slight shivering fit has ushered in the attack, but in all there has been great prostration of strength, and to such an extent in many cases, that the animal has scarcely been able to move. The pulse at the beginning of the attack has usually ranged from 65 to 75 per minute, but afterwards it has become small, and risen to 80 or 90, or occasionally even to 100. The respiration is at first very little disturbed; the visible mucous membranes are of a dirty yellow colour, and in some cases the eyes are closed, and a watery discharge escapes from them. The appetite is lost; the mouth cold and clammy, and the tongue furred. The temperature of the body, and particularly of the extremities, is much lowered. The fæces at the outset are generally hard and dry, but afterwards they become soft, watery, and often of a yellow colour. The urine is clear and limpid.

The period of augment is from three to five days, when the crisis sets in, and generally with purging. During the period of augment the animals do not lie down, but are constantly shifting their legs as if in pain. After the crisis is past they lie down a great deal, and seem much exhausted. The appetite gradually returns, and convalescence sets in from the eighth to the tenth day.

Some few cases have been complicated with pneumonia,

which however, although threatening at first, has been easily checked by the application of proper remedies.

The treatment adopted, by myself and partner, has consisted in the exhibition of diffusible stimulants at the outset, such as the Ammo. Acetatis; Æther Nit., et Spt. Camphoræ, in tolerably large doses. After the crisis has set in, tonics—the best are the preparations of iron, such as the Ferri Ammon. Citras et Sulphas—have been given with advantage. The diet has been generous and of good quality, avoiding bran mashes, which we condemn in all cases of sickness, on account of their unnourishing and indigestible qualities. Well-ventilated box stalls, warm clothing and bandages, are good adjuvants in effecting a speedy cure.

Causes.—These are beyond doubt atmospherical. The general want of moisture during the last summer, the mildness of the autumn, and perhaps the quality of the provender, have all contributed to produce this epizootic, for epizootic it undoubtedly is. It does not, however, appear to be contagious, as far as we are able to judge. It attacks all horses indiscriminately; but those who are hard worked, though well fed, have suffered the most. It has not been fatal, and we have not lost a single case out of the large number we have had under our treatment. We consider it as a blood disease, but have not obtained any of this fluid for examination, having condemned bleeding *ab initio*. The disease appears to primarily affect the gastric organs, and by reflex action the nervous system, and it might be more properly designated gastro-nervous fever than influenza.

The cases recorded in the last number of the *Veterinarian* by Mr. Cooper, and on which he courts discussion, do not, in my opinion, possess any of the usual symptoms or characters of influenza. To me they appear to be closely allied to *anthrax maligna*, called by the French *carbon*, and considered by the Germans as a variety of the *milz-brand*. The name of influenza should not be given to disease of a different type. It is a sign of an incorrect diagnosis, and might lead to fatal mistakes.

THE ADMINISTRATION OF MEDICINE TO COWS THE SUBJECTS OF PARTURIENT APOPLEXY.

Reply of Mr. Toll to Mr. Vine.

"Gentlemen,—In the last issue of the *Veterinarian* I observe that Mr. Vincent Vine asks the question as to how the medicine was administered to the two cows that were the subjects of parturient apoplexy, the particulars of whose cases I reported in your December number. In reply, I beg to inform that gentleman that it was given with a *small* drenching horn; using, of course, all necessary precaution in its administration, by allowing time for the animals to deglutate.

"I think that experience will show to Mr. Vine that in many cases of this disease, even when coma exists, all power of deglutition is not lost; and, consequently, that a *small* drenching horn is not a dangerous instrument to use. In the cases in question, for example, both animals were enabled to swallow *slowly;* and that no injury was done by the means I employed to administer the medicine is proved by the fact that they both recovered. When necessary, I have never failed to use the stomach-pump, which has always answered the purpose admirably, while its employment is so simple that I have never sought any other means for the giving of medicine. I cannot think that Mr. Vine entertains any doubt of the genuineness of my report, but, should he do so, I would refer him to the gentlemen to whom the animals belonged, and whose addresses are given. In making this remark, it is perhaps necessary that I should say that an error has occurred in the printing of the Christian name of one of them; it is not Mr. Thomas Nicolls, but Mr. James Nicolls to whom the animal belonged.

"I am, &c.

"*To the Editors of 'The Veterinarian.'*"

A SINGULAR ACCUMULATION OF FAT IN A FOUR-YEAR-OLD OX OF THE SHORT-HORNED BREED.

By Alex. Gillespie, V.S., Wooler.

This animal was fed and slaughtered by Messrs. Rutherford, of Wooler. He was of very plain exterior, or, as the butchers

expressed themselves, he had high huckles, thin rumps, a want of flesh behind the shoulders, flat ribs, and light quarters. When slaughtered, however, to their agreeable surprise a large fatty deposit was found to be situated in the right hypogastric region, enveloping the right kidney. It was conical in shape, and extended from the brim of the pelvis to beyond the last three ribs. The entire length of the deposit was 3 feet 1 inch, and its circumference, at the thickest part, 5 feet 3 inches; its entire weight being 131 lb. When cut into, it was found to be of a beautiful rich cream colour, and perfectly solid. The kidneys were not both of the same size; the left being much smaller than the right. The former weighed only $\frac{3}{4}$ of a lb., while the latter weighed $3\frac{1}{2}$ lbs. It was perfectly healthy, and void of malformation, and was situated in the centre of the deposit. The kidneys of an ox the same age and size, are generally found to weigh from 2 to $2\frac{1}{2}$ lbs. each.

The net weight of the animal was 74 stones. All four stomachs were much less than those of an ox which had been slaughtered the week previously, and which weighed only 66 stones. I estimated their size to be about one third less, particularly the third stomach. This stomach was also much flattened, and altered in shape, which I attributed to the pressure caused by the fatty deposit. All the organs in the body were perfectly healthy, with the exception of the liver, which, although looking healthy externally, was found, when cut into, to have the biliary ducts coated with a calcareous deposit, which in some places was about the eighth of an inch in thickness. It is not unlikely that many of your readers may have seen a larger fatty deposit than this one, but as it is the largest I have ever seen, or even heard mentioned, I thought you might consider this short description worthy a place in your columns.

RETENTION OF URINE, FOLLOWED BY PARTIAL PARALYSIS.

By R. J. Bolton, Veterinary Practitioner, Gibraltar.

On the 14th October last I was called upon to prescribe for a black barb that was training for our Autumn Spring Meeting, aged six years. He had been presented, I believe, by

the Emperor of Morocco to Sir Moses Montefiore, but was now the property of an officer of H. M.'s 9th Regiment.

I found that the horse was suffering from "retention of urine," and, to speak briefly, I simply administered a diuretic drench, and threw up a few enemas. In a very short time I had the pleasure of accomplishing the object for which I made use of the above means. Although I had been fortunate enough to remedy the retention in so short a space of time, I nevertheless, as a precaution, recommended that instead of being, as usual, *galloped* on the course the next morning, he should simply have walking exercise for about three quarters of an hour. This recommendation was acted upon, and, so far from the horse looking dull while out, it was remarked by his owner, and several other officers of the same corps, that he was looking better than he had ever done during the whole of the training season.

To continue my history: when the horse was brought back to the stable he ate and drank well, and the groom, having made his bed as usual, left him for about two hours. To his surprise, however, on his return, he found the horse lying down and making unsuccessful endeavours to rise. With a great deal of assistance and the use of auxiliary powers, I learnt that he managed to get up, when it was immediately perceived that he could not move a leg. As on the previous day, I was sent for, and, on examination, I found that he could not even bend his knees. There the animal stood, as I might say, like a block of wood. There was no symptom of pain present; his pulse was pretty regular, ears and extremities cold, loins tender, and the eyes vivid. I instantly ordered his loins, and other affected parts, to be constantly fomented with vinegar and water, by means of large pieces of flannel. This was at 3 p.m. on the 15th. At night I again visited him, and, although no benefit was manifest to the eye, I ordered that the same treatment should be continued, added to which I prepared an embrocation containing Lin. Saponis, and instructed the groom in the use of it. The next morning I perceived that the animal was able, *if he chose,* to move a little, but possessed too much fear to attempt it. I prohibited the groom from giving him *any corn whatever,* but, in lieu thereof, warm mashes, carrots, radishes, and armoraciæ. Throughout the day he ate very freely of these, and partook twice of tepid water. The treatment above described was ordered to be continued.

At 3 a.m. of the following day I was, awakened by a loud knocking at the door, and, upon inquiry, had the very pleasing (?) news that the horse was suffering from a severe

attack of colic. Having proceeded to the stable, I found it to be too true. He was not long, however, ere he recovered from this, but I found that though he was still unable to walk or bend a knee, his muscles were far more supple than on the previous day. The attack of colic to which I allude was, in my opinion, caused by the horse having eaten a portion of his bedding during the early part of the night.

Following the course of treatment already adopted almost continuously, keeping away any draught likely to reach him, and having a due regard to his feeding and drinking, the animal gradually recovered from his loss of muscular movements; and on the 18th I had the pleasure of handing him over to his owner a cured horse.

The attack, I must say, was sudden, and equally as severe as sudden, but I could not attribute it to any particular cause though I certainly remarked one or two things that were likely to bring it about. During the indisposition of the horse great interest was manifested by all the lovers of the turf, some saying that he was "a dead horse," while others remarked that he would "yet be in time to win the 'Barb Maiden.'" The animal is tall, black, and very noble-looking, and is as well in health this day as ever he was.

CASE OF IRREGULAR STRANGLES.

By J. Barnet, Veterinary Student, Market Drayton.

Mr. Marshall's case of irregular strangles, recorded in the *Veterinarian* for October last, reminds me of an interesting one, which came under my notice some short time since. I give an account of it from some notes I took at the time, but as it does not entirely differ from one or two cases which I find in your last volume, you may possibly not consider it of sufficient importance to publish.

A brown carriage-mare, seven years old, and between sixteen and seventeen hands high, was attended on February 5th. She had then been amiss a few days, but it appears *primâ facie* to have been a case of no special interest. An abscess was forming in the submaxillary space, which, together with other symptoms, caused the treatment necessary in cases of ordinary strangles to be pursued. Upon subsequent visits, however, the disease showed itself to be of a more serious character; the animal had now lost all appetite,

and was fast falling off in condition; the abscess also was very sluggish in its formation. This fact was attributed in some measure to the natural temperament of the patient; she (to use a common phrase) being "a leggy brute, and a bad feeder at the best of times."

Upon the 13th I received orders to the following effect: "The mare is coming to our stables; give tonics combined with diuretics; hand-rub and bandage the legs; give gentle exercise according to your own discretion; let the diet consist of bran, hay, carrots, and crushed oats; attend to her general comforts, and report any change."

As soon as she arrived I directed her to be placed in a loose-box; but to do this proved to be a matter of some little difficulty, for although the door was not a small one, still she had the greatest aversion to go through it. Howbeit, after much inviting in front, and threatening in the rear, she entered the box with a rush, and appeared greatly satisfied when the feat was accomplished. Upon examination, after time had been given for the excitement to pass off, I found the following symptoms to be present: pulse 64, and feeble; breathing 18 in the minute, but not very difficult; mucous membrane of the eyes congested; buccal membrane natural; a glairy, ichorous discharge from both nostrils; extremities œdematous; urine scanty and cream coloured; fæces natural, but voided in small qantities. Her appetite was bad; and the abscess in the submaxillary gland had left an unhealthy-looking orifice, from which a thin discharge was running.

On the 15th I discovered an abscess forming near to the posterior part of the cariniform cartilage. This I subsequently opened, and gave exit to about a wineglassful of healthy matter. It was about this date that I first noticed a disinclination of the animal to turn to the left side, and also that if left to herself she would thrust her head against the right wall of the box. This led me to think the brain, or some of its appendages, was affected, and an examination of the eyes tended to confirm this opinion, as the pupils were much dilated, and the vision evidently impaired. Exercise was now discontinued, as it assisted in no way in reducing the œdema, and was moreover attended each time with danger to the animal in passing through the door of the box. The patient soon became very restless; a marked venous pulse existed; the breathing was laboured, and the body covered with perspiration. At noon on the 20th she commenced making a circuit of the box at a brisk walk, the near side always per-

forming the lesser circle; nor could she be turned in a contrary direction. By the next morning she had become quite blind, and rushed with great force against the sides of the box, but this in no way tended to lessen her continual motion. During our endeavours to secure her so that she could not injure herself, she fell, and was afterwards unable to rise; her limbs even then were kept in motion without intermission, until death ended her sufferings about 2 a.m. on the 23rd. She would have been destroyed before this time, had not the owner been so far distant, that we could not obtain his sanction.

Autopsy, eight hours after death.—Digestive canal generally healthy; two small abscesses existed in the mesentery. The bladder showed traces of irritation, and contained some urine, with which was mixed a small quantity of purulent-looking fluid. The pleural cavity contained a little watery effusion, otherwise the thoracic viscera showed no change beyond what might be caused by a violent death. The kidneys were next removed, the right one was enlarged, and flabby, and of a lobulated appearance; in it were four abscesses, each on an average containing about an ounce of pus. They were situated in the cortical portion of the gland, at nearly equal distances apart. One of the central ones was merely confined by the fibrous capsule, and would doubtless soon have been emptied into the peritoneal sac. The left kidney contained one similar abscess, which was situated nearer the pelvis of the gland; the boundaries of each abscess were distinct and well defined Upon removing the bones of the cranium I was rather surprised to find the brain to all appearance so little affected; it could scarcely be said to be congested, excepting at its base in the neighbourhood of an abscess, which was situated in the inferior portion of the right hemisphere. It contained about an ounce of well-formed creamy-looking matter. Its boundaries were not at all well defined, the diffused matter spreading in its immediate vicinity, from the anterior portion of the hemisphere to a little in front of the median line, thus pressing upon the optic thalami, nerves and commissure.

REMOVAL OF AN OSTEO-SARCOMATOUS TUMOUR FROM FRONTAL BONE OF A HORSE.

By R. A. Stock, Veterinary Student.

On February 14th, 1862, I was requested to give an opinion respecting a five-year-old bay gelding, the property of Johnson Hayward, Esq., of Etchelhampton, which had a large tumour of an ovoid shape situated upon the frontal bone, inclining a little to the off-side. Having examined the case, I ordered the animal to be prepared for the operation of removing the tumour, and on the 16th I had him cast for the purpose. Upon making an incision from the superior to inferior part of the tumour, and through its substance, I found it to consist of a network of bone, in which was contained a quantity of pus. The tumour was about seven inches long and four broad; and its walls being thick and strong, we had to have recourse to a very sharp chisel to reduce them to the level of the frontal bone. The skin covering the part was afterwards brought together by sutures, leaving a depending orifice for escape of pus. The wound was kept clean, and dressed occasionally with a solution of the chloride of lime or sulphate of zinc. In a few weeks the healing process was completed, and the small depression in the frontal bone filled up, so as to leave but very little blemish.

Facts and Observations.

Anæsthesia produced by Inhalations of Chloroform, and kept up by Subcutaneous Injections of Morphine.—Experiments have lately been made upon dogs, by a committee appointed by the Medical Society of Versailles, to test the value of the above method. Five experiments were undertaken. On the first dog chloroform inhalation alone caused anæsthesia for nineteen minutes; with inhalation and the injection of about half a grain of morphine, thirty-six minutes. On a second dog, with chloroform inhalation alone, the anæsthesia lasted thirty minutes; but the same inhalation followed by an injection of one grain of

morphine caused an anæsthetic state of one hour and twenty-seven minutes. The same experiment being repeated, with an injection of one grain and one tenth of morphine, produced anæsthesia for five hours and forty-four minutes. The committee state in their report that the prolongation of anæsthesia by subcutaneous injections of morphine must be admitted as a fact, although they do not wish to be over positive, seeing that their experiments are but few, and, in one instance, performed twice upon the same animal.—*Lancet.*

Manufacture of Animal Manure.—The *Chemical News* says :—"In the *Journal d'Agriculture Pratique*, M. Barral gives some interesting details on the subject of the manufacture of animal manure at Aubervilliers. This manufactory consumes every year 8000 horses, 200 donkeys, 300 cows, 300 pigs, 9000 cats and dogs, 6000 kilogrammes of meat unfit for food, 500,000 kilogrammes of offal from the Parisian abattoirs, and 600,000 kilogrammes of other refuse animal matters, such as skins, horns, &c. The raw material is first cut up and boiled, to extract the grease. The flesh is then separated from the bones, pressed, and dried. It is afterwards ground and sifted, and the dried bones, which are also submitted to the same process, mixed with it, forming a manure containing 35 per cent. of nitrogen and 55 per cent. of phosphate of lime. The blood is collected separately, and also made into manure. The soup obtained in the boiling is strained, and the solid matter thus collected is added to the rest. The offal is piled in alternate layers with other organic matter, such as wool and parings of horn and hoofs, with which is mixed a certain amount of mineral phosphates. The heap is well moistened with the strained soup, fermentation is set up, and the whole is gradually transformed into excellent manure. During this process, the phosphate of lime breaks up into phosphoric compounds, more or less soluble, and various salts of ammonia are formed. This is really a much better use to put dead horses to than making them into *saucissons de Lyon*, or *filets de bœuf* for the cheap *restaurateurs*."

Fatality of Epizootic Diseases in Egypt.—It appears from the statistics of Egypt, that in 1863-4 no less than 600,000 cattle, 100,000 buffaloes, 3000 camels, and 1000 horses, fell a sacrifice to epizootic diseases.

We have no information as to the precise nature of any one of these affections ; but it is more than probable that both the

major part of the cattle and buffaloes were destroyed by the so-called rinder-pest or steppe-murrain.

AN AUSTRALIAN SHEEP-POISONING PLANT.—Specimens have been brought to Sydney of the poisonous bush that has proved so destructive to sheep passing through the desert to the north. Messrs. Devlin and Simpson lost no less than 2200 sheep from eating this bush. Mr. Devlin describes it as a pretty shrub, about four feet high, with a bright scarlet pea blossom. The botanical name is Gastrolobium Grandiflorum, and it was first discovered by Stuart in Arnheim's Land.

THE EXPORT HORSE TRADE.—The number of horses exported in November, 1864, was 298, against 335 in November, 1863, and 452 in November, 1862. For the eleven months ending November 30th, 1864, the total number of horses exported from the United Kingdom was 4423, against 4912 in 1863, and 4018 in 1862 (corresponding periods). A very large number have been exported to France, the horse "population" of that empire having never made good the losses which the constant wars waged by France have occasioned. Thus we sent 1890 horses to France in the first eleven months of 1864, against 2029 in 1863, and 1866 in 1862 (corresponding periods). The value of the horses exported in November, 1864, was £12,079, against £20,162 in November, 1863, and £24,260 in November, 1862; for the eleven months ending November 30th, 1864, the aggregate value was £221,380, against £255,223 in 1863, and £255,326 in 1862 (corresponding periods). These figures show that we, last year, sent abroad a less valuable class of horses than were exported in 1862.—*Mark Lane Express.*

REGISTERED DOGS IN SOUTH AUSTRALIA.—A return lately laid before the South Australian Legislature, showing the number of dogs registered throughout the colony, and amount of fees received on that account, gives the number of these animals duly registered at 14,464 for the year 1863. The amount received in fees in 1861 was £6058 14*s.* 6*d.*; in 1862, £3268 0*s.* 5*d.*; and in 1863, £3613 0*s.* 5*d.*; making a total during the three years of £12,940 4*s.* 6*d.*

CHINESE SHEEP.—The *New Zealander* says:—"We have received a communication from a gentleman who has some thoughts of organizing a company to obtain from China

a very prolific breed of sheep, which finds much favour with the inhabitants of that country. Their fecundity seems very surprising, as they are said to produce from three to five at a birth, or, as our accounts call it, a litter, and to have a litter of this kind twice a year. Their maternal ingenuity is not, it seems, inferior to their fecundity, as they wean the stronger lambs, and allow the more weakly ones to suck for a longer time. They are said to produce from 7 lbs. to 12 lbs. of wool annually, and to weigh 143 lbs. to 170 lbs. as mutton, and to be of a quality not inferior to Leicester sheep. These sheep inhabit the northern parts of China near the Great Wall, and would therefore require to be acclimatised to our warm climate."

Extraordinary Tenacity of Life in a Cow.—A correspondent of an Australian paper writes:—"On the night of the 4th of August last a milking cow of mine, with a rope about ten yards long attached to her horns, suddenly disappeared from her young calf, and not returning within a day or two it became quite evident that she must have got tied up by the rope to a certain teatree scrub where she calved. A search was instituted, and continued for fourteen days without success. On Monday, the 10th of September, however, I saw the cows with which the missing one usually ran looking rather remarkably into one particular part of the scrub, the supposed prison of the missing cow. I at once penetrated the scrub, and, to my sudden surprise, discovered the long-lost cow tied up by the rope, as it was supposed; she was still living and standing, but a perfect skeleton. Thus she survived for thirty-nine days without a drop of water, as the spot where she stood did not even hold surface water, and without food, except the teatree within her reach, which it seems she devoured, even to the roots. The poor thing is, as may be expected, a miserable spectacle at present; but, I am glad to state, gradually recovering."

Application of Spectrum Analysis.—Professor Roscoe, by this very delicate mode of analysation, has discovered in the Bath waters three metals not before recognised in them, namely, copper, strontium, and lithium. To the last of these, or rather to its salts, the beneficial effects of these waters on gouty or uric-acid complaints are attributable.

THE VETERINARIAN, FEBRUARY 1, 1865.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

THE APPOINTMENT OF AN EXAMINER, AND THE ONE DESIDERATUM.

A REFERENCE to the official report of the proceedings of the Council of the Royal College of Veterinary Surgeons will show that the vacant seat in the Court of Examiners, caused by the lamented death of Professor Miller, has been filled by the election of Mr. Symes. We conceive that no better appointment could have been made, and that it gives strength and dignity to the Board.

In taking this step the Council has once more indorsed the opinions we have so often expressed, viz., that teachers are alone qualified for the important office of examiners, and they have thereby spared us the not very pleasing task of criticising their acts. There is, indeed, no greater trust resting with the Council, as the executive of the body corporate, than that of the appointment of an efficient Court of Examiners. A mistake here is fatal to our position with the public, for the higher we stand as a profession, the lower are those placed who are not of us. The importance of a right selection cannot therefore be too highly estimated, and we are glad to record our entire approval of the appointment of Mr. Symes.

This gentleman will necessarily act with the Scotch section of the Board, and we trust the authorities there are equally as well satisfied as ourselves. It would indeed be gratifying to learn that this is but another step towards the removal of the chief, if not only cause of division among us. Whatever mistakes may have been made, the time has come for them to be forgotten, and for all to co-operate for the maintenance of the body corporate unbroken and complete. Those who have taken a course which,

perhaps, was originally forced upon them, cannot but see that their proceedings must tend to lessen the rightful position of many, and that the evil will increase with increasing years. To speak more plainly, the Highland and Agricultural Society cannot be ignorant of the fact, that the gentlemen who hold their certificate of examination only, feel themselves in an anomalous position as soon as they enter on the practical duties of their profession. They are naturally anxious to be removed from this position, and are asking on all sides how best it can be done. Doubtless, there are difficulties in the way; but we believe we express the general, if not the unanimous desire of the body corporate to fairly meet these difficulties.

Increasing at the rate which the body corporate does annually, it behoves the Highland and Agricultural Society to reflect on the fact, that the time may soon come when it will refuse to hold out the olive branch. Now, in reality it alone *constitutes the profession,* but it desires to add to its numbers those who should be of it. The present minority—those who are not of it—will grow smaller and smaller, and with its decrease will inevitably come its decreasing position in public estimation. We desire to see no such result, and therefore we shall continue to labour to prevent a calamity of this kind; nay further, if we could believe that the time had arrived for an amalgamating scheme to be declared, we should not hesitate to put one forth for discussion. At all events let not the present agitation cease; and especially let it be kept alive by those, whom we hope ere long to see enrolled in the ranks of such as alone can rightly claim the title of Veterinary Surgeon. Provincial Veterinary Associations can do much to bring about the *desideratum.* Let them be up and doing. They should not—ought not to neglect the present favorable opportunity. We refrain from adding to these remarks now, except to say that, while justice is done, rights must be respected.

Review.

Quid sit pulchrum, quid turpe, quid utile, quid non.—Hor.

Entozoa : an Introduction to the Study of Helminthology, with reference more particularly to the Internal Parasites of Man. By T. Spencer Cobbold, M.D., F.R.S., Lecturer on Comparative Anatomy at the Middlesex Hospital,London. Groombridge & Sons, 1864, pp. 480.

Investigations into the lower forms of animal life are at all times of deep interest to the scientific enquirer, and often, also, of the first importance in elucidating truths belonging to subjects of more apparent usefulness. Such may be said of the researches which of late years have been made into the natural history of those creatures which pass under the ordinary name of parasites. Facts have been brought to light, and hidden things made manifest, which cannot fail to be of the greatest use, if rightly applied, in keeping in check a class of diseases which hitherto have set at nought the skill of the physician. Doubtless there are still some members of the medical profession who, notwithstanding the facts which have been brought to light with reference to the destruction of life by *Trichinæ*, are ready to smile at the term "parasitic diseases," and who think that a few worms can never do any harm. Indeed, we are led to believe, that there may be even some who would turn to ridicule all researches into the anatomy and history of an entozoan as a means likely to be of public benefit. To such we would especially recommend a careful perusal of Dr. Cobbold's superb work. They must excuse us if we say that they require enlightening on the primary causes of many a fatal malady, and that here they will have their knowledge increased, and their reasoning directed into a most useful channel. Veterinary surgeons, also, although long familiar with the injuries which result from the presence of parasites, have done little or nothing in endeavouring to prevent their attacks. They have given no heed to the study of their habits or means of development, but have been content with endeavouring to rid the system of an animal of these troublesome occupants.

The want of a standard work, based on practical researches and experimental investigations into the structure and habits

of entozoa, has long been felt, but that want is now admirably supplied by the publication of Dr. Cobbold's splendid volume. We say this, with no disparagement to the writings of Van Siebold or Küchenmeister, the translation of whose admirable works on parasites was given us some seven or eight years ago, by Professor Huxley and Dr. Lankester. Still we possessed no *original work* which could compare with those of Germany in particular, and it was thought by some that we were behind foreign investigators in our knowledge of entozoa. A reproach of this kind can no longer be made. Dr. Cobbold has done good service even in this respect, and shown the continental *savans* that we have been keeping pace with them. His classification is new, but simple. He divides the class *Helmintha* into three sub-classes and five orders: the *Herelmintha*, which includes the order *Turbellaria* and *Trematoda;* the *Cœlelmintha*, including the order *Nematoda*, and the *Anenterelmintha*, with its orders *Ancanthocephala* and *Cestoda*.

Most of our readers are aware that the liver-fluke—the cause of that fatal disease of sheep known as rot—is a trematode worm. Dr. Cobbold, in speaking of its "*habits*," says:

"The *Trematoda* or flukes are not parasitic during the entire period of their existence, for while passing through the cycle of their life-development, they frequently change their residence, at times inhabiting either open waters or the dewy moisture of low pasture grounds. They perform active and passive migrations from parasitic to non-parasitic abodes; these phenomena becoming strikingly suggestive when we take into consideration the complicated series of facts which their various phases of development unfold. During their larval wanderings in search of a final resting place which shall prove suitable to their adult condition, they provisionally occupy the bodies of different kinds of evertebrata; and therefore in order to complete the genetic cycle of the trematode life, there must needs be a contemporaneity of both vertebrate and evertebrate types; a concurrence which surely no reasonable person can ascribe to mere fortuitous circumstances.

"*Distribution—in Mammals.*—Flukes are sparingly found in man and monkeys; they are still less frequent in the higher carnivora, none, to my knowledge, having been detected either in the lion or tiger. In the common cat, two forms are known, one proper to the wild, and the other proper to the domesticated state. Only a few infest the dog and fox, and they are almost entirely absent in the civets and ichneumons, an exception occurring in the Indian viverra. Flukes are abundant in the bats, being scarcely less prevalent in the moles and shrews, whilst three forms are known to infest the hedgehog. None have been described from the bears proper, but a species has been found in the closely allied badger. Weasels are particularly liable to invasion, and the same may be said of the amphibious seals. Rodents are tolerably free; but the *fasciola hepatica* is said to have been found in the common squirrel. Rats and mice generally escape invasion, and none have been detected in the sloths; hares and rabbits, on the other hand, harbour these parasites. Flukes abound in swine, but seldom gain access to the horse or ass. Speaking generally, they are prevalent in all ruminating herbivores, being grievously numerous in sheep and cattle."

In another part of the work (p. 179) Dr. Cobbold, when alluding to the fluke disorder—rot—says, very truly, that—

"when the malady has become fairly developed in the sheep, internal remedies are of little avail, in least in view of producing a thorough cure. Palliative treatment may undoubtedly do good, especially in cases where the disease is not very strongly pronounced. The most important thing is the transference of the rot-affected animals to dry ground and good shelter; supplying them at the same time with a liberal quantity of manger food, such as beans, peas, and other leguminous seeds. The fodder, of whatever kind, should be frequently changed, and many other hygienic measures adopted, all tending to promote the appetite and general health of the animal. An admixture of salines is a matter of essential importance, especially in cases where the disease is not far advanced. The beneficial effect of salt is one of those few points on which nearly all parties are agreed, and its preservative influence in the case of sheep fed upon salt-water marsh land has been previously explained. In regard, however, to the legion of remedies which have from time to time been proposed, all I need here say is, that most of them, when fairly tested, have been found to fail ignominiously."

We give these extracts with a view of showing the amount of information which the inquiring agriculturist, as well as the pathologist and scientific investigator, will obtain by a perusal of this work. Throughout it is replete with important information, and to do even ordinary justice to Dr. Cobbold's labours we should have to quote from nearly every page. At present, however, we must rest content. In conclusion, we should fail in our duty to our readers did we not earnestly recommend the work to their closest study; as a whole, it is splendidly got up, and its illustrations, which are numerous and faithful, are also most beautifully executed.

Extracts from British and Foreign Journals.

BACTERIDIA AND MALIGNANT PUSTULE.

To the Editor of the 'Lancet.'

Sir,—The facts related in the following extract from a masterly article on Spontaneous Generation, by M. Jamin, in the *Revue des Deux Mondes,* are in all ways so interesting, that I make no apology for asking you to publish them. I ought to add that the italics which occur in one or two places are mine.

"Dr. Davaine has devoted himself for some years to the

careful study of a terrible malady of the 'charbon' genus—the splenic apoplexy (*sang de rate*—anglicé, 'blood') which develops itself spontaneously in cattle, and is inevitably fatal to them. The blood of the diseased animals, examined under the microscope, has been found crowded with minute organisms allied to the *bacteria*, and which have been named *bacteridia*. This blood injected into the tissue of another animal carries these creatures with it, and death is certain. The malady is equally transmitted when a rabbit is made to swallow either the blood or part of an animal affected with splenic apoplexy. The infected blood may be dried and *kept for an indefinite time without losing the germs of the infusoria which it contains;* and whenever it comes to be injected or to be given as food, the disease is propagated. These facts being ascertained, as the symptoms of splenic apoplexy offer some affinity to those of another malignant malady known by the name of 'charbon' (or 'malignant pustule'), inquiries were instituted as to whether there might not be a still closer bond between the two affections. 'Charbon' begins by a 'malignant pustule' of blackish colour, surrounded by a ring of vesicles, which must be speedily destroyed by caustic, if a general infection is to be avoided. On the 14th of April of the present year (1864) Dr. Raimbert was called to a carter who had contracted a true malignant pustule on a farm where the cattle were suffering from splenic apoplexy. He removed the pustule, dried it at once, and handed it over to Dr. Davaine, who examined it under the microscope. It was a perfect *felt, composed entirely of bacteridia*. Rabbits fed with it contracted splenic apoplexy in consequence, and died with their blood crowded with *bacteridia*, and communicated 'charbon' to other animals. Here, then, is a disease transmitted from cattle to man, and appearing in him under the form of a pustule, which in its turn has the power of communicating to all animals the particular virus which it contains. And what is this virus? A brood of infusoria of a special and venomous species. *The smallest quantity suffices to kill, because it suffices to sow and multiply the species.* The malady is transmitted by inoculation, because the animalcules pass from the infected to the inoculated subject; it is transmitted by the air, because the germs dry up and are wafted away, and become again sown; possibly also, as many hold, by the bites of flies, which thus become the vehicle for the transmission of the *bacteridia*. Such is the explanation, not less simple than certain, of the effects of a particular virus. The future will decide how far it is possible to extend to all analogous cases so fertile a theory, but already it is easy to

understand the hopes of physiologists and to predict their success: perhaps we are on the eve of knowing, avoiding, and curing contagious scourges."*

The facts here detailed are not altogether new. Virchow, and some earlier observers whose names escape me for the moment, had already pointed out the occurrence, in countless numbers, of a kind of "vibrio" in the blood of *living* animals affected with charbon.

I have not been able to refer to Dr. Davaine's own account of these researches; but before the case which he wishes to make out for the minute organisms he describes can be considered as finally established, other data will be required beyond those adduced by his reviewer. Not only must the constant presence of this particular species of *bacteridia* in the diseases in question be ascertained, but its absence in other putrefactive disorders. In all such cases there is a special danger, which those who have most studied the subject will best appreciate, of falling into the old error of taking for essential what may possibly be only an epi-phenomenon. The perfect way in which the facts seem to explain all the conditions, although a strong argument in favour of the interpretation set upon them, may, on the other hand, easily beguile us into a too ready acquiescence in it.

At the same time the whole tendency of recent research, and of Pasteur's discoveries in particular, is to the effect that the tribe of minute organisms to which the *bacteridia* belong, in reality take the initiative in, and are the primary cause of, the zymotic changes with which they are found associated.

The uncontrollable *itching* which marks the first stage of malignant pustule, and is so characteristic of it, is, when considered as a phenomenon which betrays the presence of so many parasites in other parts, not undeserving of attention in connection with Dr. Davaine's view.

Should his discovery be confirmed by more extended researches, it is one of which it will be difficult to overrate the value.

As regards malignant pustule its importance will be supreme. Diagnosis, pathology, origin, mode of propagation, and indications of cure, will be all summed up in the conditions which attach to the growth and multiplication of a single parasitic organism.

In relation to diagnosis, the fact is one which might eventually become of the greatest possible use. For if it be true

* *Revue des Deux Mondes*, Nov. 15th, 1864, pp. 442-43.

that the first brood of *bacteridia* is developed in the part which is to be the seat of the future pustule, the practitioner, armed with the microscope and with the little "harpoon" with which the Germans dip for trichina, might ascertain the characteristic presence of these minuter parasites by means of an operation not more formidable than the puncture of a grooved needle.

But, as M. Jamin rightly suggests, the interest of this discovery, should it be confirmed, culminates in its relation to the subject of contagion generally.

In a memorandum on the Investigation of Epidemic and Epizootic Disorders, which I drew up at the request of the British Medical Association in March, 1863, there occurs the following passage:

"In order to render the inquiry on which the Association is about to enter really comprehensive, it would be necessary to associate with the study of epidemics that of the diseases caused in man and animals by living parasites, external and internal.

"A fuller knowledge of the phenomena attaching to the dissemination of the prolific and minute germs of these parasites could not fail to be of great use in helping to the true interpretation of the phenomena which attach to the strictly analogous dissemination of the equally prolific and equally minute germs of contagious poisons.

"In particular, it would be of the highest value in showing, by data that could not be gainsaid, what is the real worth of the negative evidence now so implicitly relied on, as an indication of spontaneous origin, and as opposed to the law of propagation by continuous succession.

"Additional reasons for putting the parasites and the contagious together in such an inquiry are—1, that at many points the two blend insensibly one into the other; 2, that, with the advance of knowledge, diseases are constantly being transferred from the group of common contagions to the group of parasites; and, 3, that there already exists amongst the most advanced thinkers on these topics, a shrewd suspicion that the two groups will eventually coalesce, and be found to be in their essence identical."

Dr. Davaine's interesting discovery seems not unlikely to offer a striking illustration of more than one of the several positions here taken.

I am, Sir, your obedient servant,

WILLIAM BUDD, M.D.

THE CULTIVATION OF VETERINARY SCIENCE IN INDIA.

The Times of India says—"We believe, as a general rule, horses are less cruelly treated, and less exposed to disease in this country than they are in northern climates. Of course we must make an exception of the animals belonging to Bombay buggywallahs, and Calcutta dak concerns, but a gentleman's horse in India, kept for general purposes, is treated better, and is less subjected to the causes of disease, than the majority of its fellows in Europe. Not that the Anglo-Indian, *ex necessitate*, knows anything more about the subject here, than he did at home, but because the horse, in this country, is ensured an adequate supply of fresh air, is not generally worked beyond what amounts to moderate exercise, and very seldom escapes a thorough daily hand-rubbing. Whatever may be the faults of the Indian Syce, he generally at least cleans his horse well, and is never content with the use of the besom or whisk of hay which so often does duty for currycomb, brush, and hand, in middle class English stables. Then, again, the small amount of work we require from our horses in this country, is as nothing compared with that which the roadster and hack perform at home. Occasionally, during active military operations, or when officers have been pressed for time, the endurance of the Arab or native Indian horse has been tested, and found to be quite equal to that of the animal in any other part of the world. But, as the rule, our horses in this country are certainly not injured by hard work. The rock on which they 'come to grief' is the prevailing ignorance regarding equine diseases. A valuable horse falls sick, and probably there is no resident in the station possessed of more than the veriest smattering of veterinary knowledge. An epidemic of sickness occurs, and, in the absence of a veterinary surgeon, a whole troop is physicked with deleterious drugs, when the one thing needful was some simple sanitary arrangement. As the military mind has only very recently admitted the necessity of sanitary precautions for men, it is perhaps premature to expect the application of the principles to horses. But, however this may be, it is none the less true that the diseases of lower animals are susceptible of prevention in much the same ratio as those of the 'lord of the creation.' What could be a greater farce, generally speaking, than the system so long adopted of placing the veterinary charge of the horses of a troop or squadron in the hands of the cornet or lieutenant,

when circumstances forbad the presence of a qualified veterinary officer. We venture to say, that many a good horse has been severely injured by arsenic, aloes, or turpentine; the three universal panaceas of Indian amateur horse doctors. Further, we have no hesitation in asserting that, in nine cases out of ten, a sick horse would do much better if left to itself altogether, than if exposed to the mischievous agency of an ignorant compounder of nostrums and recipes. And as regards all surgical affections, these remarks are doubly applicable.

"The Military Departmental Examinations, recently instituted, will tend to neutralise some of this ignorance in particular branches of the service. To acquire an insight into the principal diseases which afflict the horse in this country is not very difficult. Without possessing the anatomical and physiological knowledge necessary for the diploma of the Royal College of Veterinary Surgeons, a man may readily acquire a large amount of very valuable information. The diagnosis of the more common diseases; the administration of the most suitable remedies; and, what is still more important, the power to distinguish when, in the absence of a professional surgeon, the animal would be better left to nature, are the principal points. Government might well expect such qualifications from all public servants attached to mounted corps. And we believe the institution of a school or college of Veterinary Surgeons in this Presidency would be both a public and private benefit. We believe the Principal Veterinary Surgeon has, during his period of service, been the means of affording instruction to a considerable number of pupils, both European and native. If a school of Veterinary Surgery, with its Veterinary Hospital, and the customary instructions were established, we believe, as the fact became known, natives would proceed from all parts of India for the purpose of acquiring information. In the northern parts of Western India almost every gentleman is a horse-breeder, while the epidemics which constantly occur demonstrate the ignorance which prevails regarding equine diseases. Neither are the natives themselves slow to acknowledge this, and to apply for the aid of any European who is known to possess even the smallest amount of veterinary skill."

PROHIBITION OF STOCK ENTERING QUEENSLAND.

The *Economist*, of Melbourne, says that "in our issue of the 15th April we called attention to an instance of the hurtful effects of restrictions upon the movements of stock. We alluded to the case of a shorthorn bull, which had been imported at a great expense by Mr. Stenhouse, for the improvement of his herds in Queensland, and which he was compelled to offer for sale in Melbourne, as the regulations of that colony did not admit of the importation of cattle, however sound they might be, on any pretence whatever. Again, on the 12th of August we noticed that 134 rams, which had been purchased for Queensland from Mr. Thomas Shaw, junior, were to be re-offered for sale at the Skipton Show, on account of the stringent nature of the Scab Act now in force in that colony.

"It appears, therefore, that the system of absolute exclusion, which even the inhabitants of China and Japan have seen reason to give up, is to remain in full force in the youngest, and certainly not the least thriving, of British colonies. We have never doubted the impolicy of absolute prohibition; and we even doubt whether an appeal to the supreme court would not establish its illegality as well. No one doubts that the various colonial Parliaments have the power to legislate with the object of preventing the introduction of stock infected with a contagious disease. There is an obvious difference, however, between the exclusion of diseased stock only and the exclusion of all kinds, whether diseased or sound; and it would be satisfactory to ascertain from the highest authority whether the Constitution Acts of the several colonies enable their Legislatures to infringe upon individual rights to the extent of preventing people from doing what they like with their own, so long as they do nothing to hurt or endanger the property of others. Now, no one will assert that the introduction of clean sheep into Queensland is hurtful to any one; and we can imagine that the courts would as soon sanction the act which prevents it as they would one having for its object merely to exclude smallpox which totally prohibited the landing of passengers at any of the ports of the colony. We have heard it stated that in despite of the law there is not a little stock crossed over the boundary from New South Wales. As the whole that does succeed in crossing must necessarily be uninspected, there is a greater probability that the scab disease

will be introduced by means of some of these sheep than if the introduction had been permitted under regulations similar to those of the 27th clause of the Scab Act of New South Wales.

JUSTICE FOR DONKEYS.

To the Editor of the 'Times.'

Sir,—The following letter having been placed in my hands, with permission from the writer and Mr. Gurney to publish the same, I beg to say that if you can find space for it in the *Times* you will render to donkeys a great service, by giving a hint to agricultural societies of the claims of a much-abused but useful animal.

I have the honour to be, Sir,
Your very obedient servant,
The Secretary.

Royal Society for the Prevention of Cruelty
to Animals, 12, Pall Mall; Jan, 13.

"Essex Agricultural Society, Slough-house Farm, Halstead.

"Sir,—I have the pleasure to inform you that at a meeting of the General Committee held at the Shire-hall, Chelmsford, on Friday, the 28th inst., I submitted your letter of the 16th August, in which you kindly offer to become a vice-president of the society upon the condition that donkeys were admitted to the annual shows; for which you would be happy to offer prizes.

"A discussion ensued relative to the admission of donkeys, when Mr. Fisher Hobbs moved and Mr. Peter Portway seconded,—'That Mr. Gurney be not elected a Vice-President, upon the condition of donkeys being admitted to the shows.' Upon which an amendment was moved by Lieutenant-Colonel Brice, seconded by Mr. O. Copland,—'That Mr. Gurney's offer be accepted.'

"For the amendment . . . 11
"For the original motion . . 3
"Majority for the donkeys . —8

"I beg to remain, Sir, yours very respectfully,
"Robert Emson, *Secretary*.

"To Samuel Gurney, Esq., M.P.

REPORT OF EXPERIMENTS MADE UNDER DIRECTION OF THE LORDS OF THE COUNCIL AS TO THE VACCINATION OF SHEEP, AND AS TO THE INFLUENCE OF SUCH VACCINATION IN PREVENTING SHEEP-POX.

By James F. Marson, Esq., F.R.C.S., Resident Surgeon of the Smallpox Hospital, and

Professor Simonds, of the Royal Veterinary College.

(*Continued from p.* 63.)

The fact of the natural sheep-pox being at that time in existence in the flock was mentioned to Mr. Overman by Mr. Simonds, with whom he had arranged for five of the vaccinated lambs to be sent to Mr. Muskett's for the purpose of exposing them to the infection, and an equal number to be forwarded to the Royal Veterinary College to be tested by inoculation with the virus of sheep-pox. Both these arrangements, however, Mr. Overman declined to carry out, basing his objections chiefly on Mr. Simonds' statement, that some of Mr. Muskett's lambs were the subjects of the *natural*, and not of the inoculated disease. This determination was communicated in the following letter:

"Weasenham Rougham, Norfolk; *October 20th*, 1848.

"Sir,—I have seen Mr. Muskett this morning, and he expresses his surprise that you should have told me last Monday that his lambs were suffering from the smallpox in the natural way. Mr. Cook, of Litcham, said the same to Mr. Muskett on Tuesday last at Lynn market. Mr. Muskett's statement made to me this morning is, 'My lambs have not ailed anything since they recovered from the inoculation several weeks since.' From the appearance of the lambs this morning I have no hesitation in saying they have recovered, and therefore under these circumstances it would be no test for me to send five lambs there, and, after reconsidering the subject of our conversation, I have determined not to send any of the sheep to the Veterinary College.

"I am, &c.

"Henry Overman.

"To Mr. Simonds."

The pressure, however, which was continued to be put on Mr. Overman by those who knew all the facts relative to his so-called vaccinations ultimately induced him to explain in a

letter to the *Norwich Mercury*, dated November 22, 1848, that, besides the ram sent to Mr. Farrer's which took the disease, one of the two sheep sent to Mr. Muskett's had died, and the other became affected with variola. They were inoculated, he says, "but one never took the disease, but died of gangrene ensuing from the inoculation, the other is alive and well, and ailed very little from the experiment." He goes on to remark that "three of the rams are now at Mr. Caldwell's at Hilbro', two of which have hitherto escaped the smallpox entirely, but one has taken the infection." He also adds, that three rams are at the Hon. F. Baring's, of Buckingham. "I sent my shepherd," he says, "to see how they were going on. The disease was there, but my own sheep were all untouched." Two more rams he states were hired by Mr. Gates, of Illington, and that "the disease, natural and by inoculation, had here carried off 49 out of 800 sheep. After the rams had been about ten days there my shepherd pointed out to Mr. Gates that one of them had the smallpox; it had, however, passed its height, the pox was dying off, and nothing had occurred to Mr. Gates and his two shepherds to indicate that it had taken the disease."

In commenting on the statement relative to the escape of the rams at the Hon. F. Baring's, Mr. Edmund Oldfield, who has been referred to in the recent discussion on the vaccination of sheep in the Wiltshire papers as an advocate of the system, says, in a letter to the *Norwich Mercury*, dated November 29, 1848, "It is true that the three rams sent to the Hon. F. Baring's are at present free from the disease, and simply from the reason that his breeding flock has had no smallpox among them. Some of Mr. Baring's 'crones' and fat sheep, however, in another part of the farm have been affected; but the ewes with which Mr. Overman's rams were placed have remained perfectly free from the disease."

(*To be continued.*)

Translations and Reviews of Continental Veterinary Journals.

By W. Ernes, M.R.C.V.S., London.

Annales Vétérinaires, Bruxelles, May, 1864.

DIARRHŒA IN CALVES.

By M. Guilmot, Médecin Vétérinaire du Gouvernement, Havelange.

This malady has been very frequent of late in the provinces of Liège and Namur. The veterinary surgeons who have noticed it give but an imperfect account of it. M. Guilmot traces the history of it more satisfactorily; by reproducing which we are enabled, we think, to understand some isolated observations.

Diarrhœa is often very destructive. By it a herd of young cattle may be carried off in from the third to the fifth day. It prevails at times with such intensity, and over such an extent of country, that it becomes a serious calamity.

We will endeavour to describe the symptoms, and the causes which give rise to it most frequently, if not always; also point out the treatment and state the prophylactic means to be adopted to oppose to it; and, finally, notice the microscopic characters.

Symptoms.—From the second to the fifth day the alvine evacuations of the calves affected are yellow and profuse, the appearance of which is ushered in by dulness, beating of the flanks, weeping of the eyes, and clammy mouth. If no treatment is opposed to it at once the young animals sink under it a few days after birth, in a complete state of marasmus. Indeed, however well the treatment may be directed, it is not always successful.

Causes.—This malady always shows itself in those individuals whose mothers, though in good health, have been fed on green food. But there is no kind of diet which gives to the milk those qualities that directly provoke it, for I have observed it even when the cows have been abundantly fed with highly nutritious food. The milk then acquires, as in the first case, too much viscidity, and thereby a purgative effect is produced, which the delicate organs of the newly born calf cannot support. From the observations I have made, and which agree with those made by other veterinary surgeons, it is after having partaken of the first milk, during the first few days after birth, that the calves are attacked with the malady in question. It frequently happens, in fact,

that immediately or a short time after they have taken the first milk they begin to be uneasy, and exhibit colicky pains. The little animals strike their abdomen with their hind legs, and lie down; diarrhœa having set in, they seem better; but this seeming improvement only assures the farmer as to the danger of his calves. They often give them common salt to make them drink, when the diarrhœa commences with redoubled vigour, assisted, doubtless, by the salt. But salt is not always given, and I have seen diarrhœa supervene where it had not, but it has always been more violent in those cases where it has. It is easily perceived that by persisting in that course of treatment superpurgation is the inevitable result, and death soon takes place. In accordance with my own observations, I am convinced that the *first* milk is the only cause of this disease. But, as stated before, it is when the mothers have been overfed on highly nutritious food that modifies the mammary secretion. Up to the present time I have not observed the malady in calves the produce of cows which had not been fed on the same diet. There, however, may exist a moderate diarrhœa, to remove from the system the meconium, which is physiologically considered a necessary act.

Before coming to the consideration of the remedies wherewith to combat this peculiar affection, it is indispensable to ascertain, in an unexceptional manner, whether the symptoms observed during life well indicate the disease and its microscopic characters which I have found to exist at the autopsy. The knowledge of these facts can alone enlighten the practitioner. I have taken care to note correctly all that I have seen and perceived. For many years I have made *post-mortem* examinations, and I have always observed the following to be present:—cranial cavity, nothing abnormal; thoracic cavity, the organs contained in it healthy; abdominal cavity, the peritoneum healthy; the mesocolon presents some arborizations; the fourth division, or true stomach, contains some curdled milk; the mucous membrane is injected uniformly throughout; the small intestines show the same kind of lesions, only that the injections of the mucous membrane are in the form of extended arborizations; the large intestines are filled with liquid ingesta, which exhales a repulsive odour, characteristic of this diarrhœa; the mucous membrane presents unequivocal traces of inflammation, and is highly injected. In certain places slight spots resembling ecchymosis exist, which, when detached with caution, and washed, present a pink colour, which is due to the congestion of the veins which cover them. The kidneys, spleen, and bladder, are exempt from any alteration.

These characters cannot be mistaken. The gastro-intestinal canal is the seat of the malady which has caused the death of the animal. It is impossible to assign to any other cause than the milk the state of the fourth stomach, for the calves have taken no other nourishment. I have observed in one farm the death of several calves consequent on taking the milk from cows which had been principally fed on beet-root cooked by steam, and mixed with colza-seed oil-cake. The cows which had just calved, or were about to calve, had their racks filled with hay, and were otherwise highly fed. This rendered their condition such as to give an abundant quantity of milk, but which killed the calves who took it in two or three days. I drew the attention of the owner to this, and prescribed, besides an alkaline medicine for those cows that were about to calve, and a restriction of the diet, as I considered this the cause of the losses which had occurred before my attendance. My recommendations would have been insufficient had I not prescribed other remedies in the event of the reappearance of the malady. As these are the essential parts of the treatment which I have adopted, I will now enter on the details of it; but I may state that this malady attacks in preference the calves of the Durham breed. Calves of the indigenous breed resist the malady much better under identical conditions, at least I have observed this in the district which has been intrusted to me.

Treatment.—This is both medical and prophylactic, and to be successful two conditions are indispensable—first, that the veterinary surgeon be sent for in time; and, secondly, the withholding of the milk from the calf. I insist on the last, for it is the *sine quâ non* of success. If the diarrhœa has already set in medication must be directed to it, the digestive organs being the seat of a considerable flux, in which case I have found the following prescription useful:—Decoction of Althæa cum Syrup. Papaveris et Syrup. Simplicis, 200 grammes of the first and 90 grammes of the second and 60 grammes of the last; three table-spoonfuls to be given for a dose. Injections of cold water per anum, warm clothing, and plenty of cold water to drink. This treatment should be modified according to the case. Laudanum or the extract of belladonna might be added. Combined with this I give hay tea, which can be easily made by pouring boiling water on a handful of hay. This may be given warm or cold, about half a litre a day, to the young animal. I have derived great benefit from this; it is tonic as well as nutritious. When the calves get better they become very fond of it, and it might be given with impunity. This treatment

should be continued until the diarrhœa is stopped and the appetite returns. Should the milk then be given? By no means, for I have witnessed some fatal relapses in not having followed these recommendations. A decoction of linseed, to which the yolk of an egg has been added, may be advantageously substituted for it. This may be repeated several times a day, and as the cure advances should be diminished by degrees and milk substituted for it, in the proportion of one fourth or one third, according to circumstances. I have often been surprised at the intolerance of the stomach and the intestines for milk in the course of convalescence.

I do not pretend to give the foregoing remedies as infallible in all cases of diarrhœa in calves, but I fulfil a duty in stating the means which have been sanctioned by my experience. It is not only the calves of three or four days old that that are attacked, but those of a more advanced age are equally liable, and the same remedies are applicable in all cases.

Prophylactics.—Experience has shown that in those places where no preventive means had been adopted the malady reappeared the following year. This was a natural consequence, as the same causes will always produce similar effects. The prophylactic means for the cows are—alteration of the diet, the administration of alkaline medicine, and the abstraction of blood, if indicated by the pulse. For the calves, the entire withholding of milk for the first days after birth, after which it should be diluted in different proportions with a decoction of linseed, so as to obtain the toleration. Diarrhœa is a disease to correct which a great many means have been employed, such as feculents, absorbents, astringents, bitters, excitants, saline purgatives, opiates, and caustic agents, such as sulphite of copper and zinc, in four-gramme doses, likewise the nitrate of silver in doses of one gramme, and others. All these have been employed, and to each some cures have been attributed. What can be inferred from these results except that we do not take sufficient account of the morbid state we have to combat? We do not investigate sufficiently the organic modification to which we have to direct our remedies. For this reason we see remedies quite different in their action produce the same effects. Be this as it may, the veterinary practitioner is sometimes very much embarrassed when called upon to arrest an intestinal flux, and is glad of any means at hand, even if they are somewhat empirical. A case by M. Dobree confirms what I have stated relative to the anti-diarrhœaic property of the nitrate of silver. A yearling foal was affected with diarrhœa

for three months, complicated with chronic apyretic enteritis. Opiates and astringents had no effect; the poor animal was bordering on a state of marasmus; the thirst was intense and the appetite gone, when nitrate of silver was administered for several days, and it effected a perfect cure.

WEST OF SCOTLAND VETERINARY MEDICAL ASSOCIATION.

OFFICIAL REPORT.

The Quarterly Meeting and Annual Dinner of this Association took place at the Bedford Hotel, Glasgow, on Wednesday, the 28th of December, 1864, Mr. Robinson, the President, in the chair.

After the conclusion of the preliminary business the election of office-bearers for the ensuing year was proceeded with, when the following gentlemen were chosen:

Mr. William Cockburn, Glasgow, *President.*
,, Anderson and Robinson, *Vice-presidents.*
,, Alexander Pottie, Renfrew, *Secretary.*
,, Andrew Roble, Parkhead, *Treasurer.*

And Messrs. M'Bryde, Donaldson, Walker, Sharp, Mitchell, Blackie, and Ferguson, *Directors.*

Mr. Barr, Ayrshire, was admitted a member.

The financial statement was read by the Treasurer, and showed that the bank deposit amounted to £28.

Mr. Walker read a very instructive paper on "Laminitis," which led to a spirited debate, in which particular notice was taken of the discussion now going on in the *Veterinarian* on this subject between Messrs. Greaves and Williams. The ideas advanced by the former gentleman were not generally entertained, especially those which sought to establish the hereditary nature of the disease. The affection was considered by the members as a simple inflammatory one, depending almost always upon accidental causes. The majority of the members, however, spoke in high terms of the friendly manner in which both these gentlemen had given their opinion to the profession, which they deemed a good proof of the benefits of associations of this kind.

At five o'clock the members assembled at dinner, under the able presidency of Mr. Cockburn and Mr. Pottie, Croupier. On the cloth being removed, and the Royal and national toasts drunk, Mr. Robinson Greenock rose to give the toast of the evening. In doing this he said that—The toast I am now about to propose is, in some respects, the most important one on our list—it is "The Success of the West of Scotland Veterinary Medical Association." This society has now been in existence for upwards of six years,

and at the present moment, I am proud to say, it is in every respect in a highly flourishing condition. It is equally so in regard to the number and status of its members, the condition of its funds, and in the variety and importance of the scientific communications that have been discussed at its ordinary business meetings.

Respecting its funds, the society has recently been somewhat at a loss how properly to apply the surplus which remains in its hands after defraying the ordinary expenditure of the association. In considering this question, I may remark that our worthy secretary has submitted a proposition to the members, which, if acted upon, will, I conceive, solve the difficulty at once, and in a manner thoroughly consistent with the spirit and objects of the association, while it is conducive to the interests of us all. It is, as most of you are aware, to lay aside a portion of our income to form a fund from which to purchase subjects for scientific investigations, and to maintain them during the time they are under treatment. By this means new operations and the *modus operandi* of new medicines may be thoroughly tried and their merits determined. The advantages of this suggestion will, I think, be obvious to you all. It will afford to the members of the society opportunities of testing their particular theories in physiological and pathological science, without risk to their personal interests and reputation, and it cannot fail, if judiciously and scientifically carried out, to conduce powerfully to the advancement of our profession in the west of Scotland. I trust that this subject will be gone into with the spirit that its importance merits, and that at our next annual meeting we shall be able to congratulate ourselves upon its complete establishment on a sound and satisfactory basis.

Four years ago the editors of the *Veterinarian*, in their notice of our annual meeting, awarded us the honour of precedency in the establishment of veterinary medical societies. Since that time, whether our example has been suggestive to our intelligent professional brethren in England, and they have taken the initiative from us or not, I cannot say; but it is, I am sure, to us a gratifying fact to know that no fewer than four well-organized and influential associations have been brought into active operation amongst them. Not only amongst ourselves, but throughout our whole profession, I am persuaded the conviction is rapidly being accepted—that such associations are *media* of very great benefit to their members, and I would seek to impress upon the students of our profession the great and important advantages they will derive from our own and from kindred societies. As soon as a young man has acquired his diploma, and settled himself in any particular locality, he should avail himself without delay of the privilege of enrolling his name in the nearest veterinary medical society, and take an active and intelligent share in its transactions. He will thus participate in a large degree in the matured experience of the elder members, and speedily have the crude theoretical ideas which all students more or less acquire during their college education modified and

reduced to that practical character which otherwise a long practice alone could effect. He will also form a personal acquaintance with his brother professionals in the district, and be enabled to form a more just appreciation of their abilities and skill than he could otherwise readily acquire.

Amongst all the members of societies such as this—the younger as well as the older—an active participation in their transactions cannot fail to foster a readiness to interchange and discuss ideas on professional matters which will go far to elevate our status in the scientific world.

Gentlemen, it is the province of our association to dispel the fogs of mystery and exclusiveness, which have a tendency to gather around us and enshroud us in petty jealousies and antagonism, and to substitute a clear atmosphere of scientific light and truth, which will illuminate and expand our minds. I therefore ask you to drink with me the toast I have named, "Success to the West of Scotland Veterinary Medical Association."

Mr. Anderson next gave "The Veterinary Profession."

The Croupier followed by giving "The Veterinary Schools," which was replied to by Mr. M'Bryde.

Mr. Bryce gave "The Highland Agricultural Society."

Mr. Donaldson, "The Retiring Office-bearers," which was replied to by Mr. Robinson.

Mr. M'Bryde gave "Veterinary Students," which was replied to by Mr. James Anderson.

Mr. Robb gave "The Health of Mr. Anderson, the founder, it might be said, of the Association."

The evening was passed in the greatest harmony and friendship; and before parting it was arranged that the annual dinner should take place in the month of July, instead of December, as formerly.

LANCASHIRE VETERINARY MEDICAL ASSOCIATION.

OFFICIAL REPORT.

The Annual Meeting and Dinner of the Association took place on January 11th, at the Brunswick Hotel, Piccadilly, Manchester. The meeting was well attended; and after the transaction of the ordinary business, the President, P. Taylor, Esq., delivered the following inaugural address:

Gentlemen,—By your kindness I appear before you as President of the Lancashire Veterinary Medical Association; and as it is a time-honoured custom to present an inaugural address upon election to any important office, I do so on the present occasion, in the

hope that my humble aid may be a means of raising the standard of veterinary science, and show how necessary it is that veterinary medical associations should be so formed and conducted as to elevate our minds in the pursuit of knowledge. This can only be done when each member is determined to fulfil his allotted duty; for I maintain that, however high in the walk of science a man may be, the more nobly, more faithfully is he fulfilling his mission to his Maker and to his fellow-man when he lends his presence and his abilities to endeavour to exalt and elevate the thoughts and ideas of his fellow-man. At our last anniversary our esteemed ex-president was kind enough to read an interesting paper, giving an historical account of the veterinary surgeons who had practised their art in the city of Manchester. I will not repeat the kind remarks he made of gentlemen who had, and are now, adding fame and honour to the science of veterinary medicine. I propose, by your kind indulgence, to review veterinary science up to the present time. According to the definition of "science," Sir John F.W. Herschell, is the following:—"Science is the knowledge of many, orderly and methodically digested and arranged, so as to become attainable by one."

Gentlemen, we are the living representatives of the science of veterinary medicine of the present day, and our knowledge, matured and improved by our own observation, reasoning, and practice, has been gathered from those that have departed from this stage of life; therefore it behoves us to be on our guard and faithfully to perform our duty; for there is scarcely any well-informed person who, if he has but the will, has the power to add something essential to the general stock of knowledge, if he will only observe regularly and carefully some particular class of facts, which may most excite his attention or which his position may best enable him to study with effect. High, noble, and great as are Divinity, Law, and Medicine, equally great are the honours and emoluments conferred on some of the most eminent of their sons. Not so with our profession. Veterinary Science is and ever will be much indebted to its sister profession—Medicial Science.

Hippocrates, the father of medicine, who lived 460 years before the birth of Christ, was the most celebrated physician of early times. He wrote a treatise on the curative treatment of horses, and practised indiscriminately on the horse and its rider. 300 years after the birth of Christ we may be said to have a special veterinary Hippocrates in the person of Vegetius, who took upon himself to collect and record the knowledge of previous veterinary authors. After this a long period of darkness succeeded. Soon after the passing away of these barbarous ages iron shoes, which before had been but partially tried, became generally used, and the treatment of diseases of the horse was confided to the horseshoer, while medical care of other animals was entrusted to the shepherds and their attendants. The sixteeenth century opened unto us a new field of learning and encouragement of the arts, and amongst the first patrons was Francis I of France, who ordered the Constantine collection to be

translated from the original Greek into Latin, and afterwards into Italian, German, and French. Knowledge from this time became diffused throughout Europe, and our art continued to progress during the seventeenth century. About this time also Vegetius' works were translated into some of the popular European languages, and a treatise on horse-shoeing by an Italian—Cæsar Fiarchi, and likewise an elaborate work of great merit on veterinary medicine, by Solleysell, which was a great means of advancing the veterinary art, were published.

In the year 1761 France, with the acuteness and alacrity which distinguish her even in our day, set the noble example of establishing under royal patronage a public veterinary college at Lyons, having the celebrated Bourgelat for its professor. His medical and anatomical works are numerous and well known. Five years afterwards, which brings the time to 1766, a second college was opened at Alfort, near Paris, showing with what energy the French nation advanced a science which was necessary and profitable for their country. Soon after this, other colleges were opened at Vienna, Berlin, Copenhagen, Dresden, Leipsic, Prague, Munich, London, Hanover, Naples, &c. As a contemporary with Bourgelat, the first professor of the veterinary college at Lyons, lived the elder La Fosse; one that will ever be appreciated and respected for the great improvements and discoveries he made in veterinary medicine, which he communicated in the form of memoirs to the Royal Academy of Sciences at Paris. About this time also works were published by the following eminent French veterinarians:—Chabert, Flandrin, Huzard, and others; a veterinary dictionary by Buchos; a treatise on peri-pneumonia in cattle, and mange in horses by Chabert; and a work on glanders by Chabert and Huzard. France has given us enlightened and scientific men since this period. Among them we have Hurtrel d'Arboval, Dupuy, and Girard, to whom the French colleges were indebted for their original text-book on the anatomy of the horse. At the present time we have the enlightened, scientific, and patriotic Professor Bouley at the Alfort College, who has published several veterinary works, and who receives English veterinary surgeons and students with that gentlemanly grace which deserves our warmest thanks.

In the year 1788 Mr. Charles Vial de St. Bell, whose name will ever live in the memory of succeeding veterinary surgeons by being the first professor of the veterinary college in England—he was professionally educated at the Lyons Veterinary College, and afterwards became junior assistant at Alfort—came over to England, and published proposals for forming a veterinary college in London. He was, however, disappointed in his praiseworthy motives, and as such returned to France. In the year 1790 he again visited England and made a second attempt, in which he was supported by the members of the Odiham Agricultural Society, who were fully convinced of the advisability of such an institution. After a time, namely, in February, 1791, the first organised meeting took place in Bond Street, London, when those present formed themselves into a

college, and history records that a high and influential nobleman—viz., his Grace the Duke of Northumberland—condescended to undertake the office of its president. Vice-presidents and directors were selected, and a house in St. Pancras was taken. Pupils were admitted, and St. Bell appointed professor, in the duties of which office he was skilfully assisted by the able services of Mr. Delaberre Blaine, who acted as a translator and anatomical demonstrator. St. Bell's works were an 'Essay on the Geometrical Proportions of Eclipse,' 'Lectures on Farriery, Shoeing, and Diseases of the Feet.'

In August, 1793, St. Bell's death took place, and there appears to have been some differences of opinion as to who was the most suitable person to succeed him. We have the names of Mr. Clarke, of Edinburgh; Mr. Morecroft, and Mr. Coleman, a young surgeon. It appears that Mr. Coleman and Mr. Morecroft undertook the professorship conjointly, but very soon afterwards Mr. Morccroft seceded, and Mr. Coleman became the sole professor, and under his able and scientific care the London Veterinary College soon rose to eminence. During his most successful reign a theatre was opened for the delivery of lectures, a dissecting-room erected, a museum formed, and an infirmary added to the college, for the reception of patients. The pupils were examined by medical professors and practitioners, and if found qualified received a diploma to practise. Profcssor Coleman was most ably assisted in his good work by two of the greatest ornaments in the medical profession, viz., the illustrious John Hunter and Sir Astley Cooper. George the Third also granted the rank of commissioned officers to such veterinary surgeons as might be appointed to regiments.

Under these high and most noble encouragements the college soon acquired additional teachers. Mr. Sewell was appointed assistant-professor, and subsequently Mr. Vines and Mr. Morton became active and useful officers. It was not, however, for several years after this time that the teaching and practice of the college became considerably extended, by adding to the curriculum of study the anatomy, physiology, and pathology of the ox, sheep, dog, and other animals.

We have thus come down to the nineteenth century. Professor Coleman published works on 'The Formation and Uses of the Natural Frog of the Horse;' on 'The Structure, Economy, and Diseases of the Foot;' and 'Observations on Wounds of Circumscribed Cavities.' Mr. Morecroft published a work on 'The Various Methods of Shoeing Horses,' with incidental observations. Mr. John Lawrence published a collection of extracts from St. Bell, Osmer, Clarke, and Lord Pembroke, bearing date, 1801. Mr. White, a veterinary surgeon, of Exeter, produced a 'Vade-mecum of Farriery.' At this time, also, a work of great merit and practical knowledge, on 'The Paces and Proportions of the Horse,' appeared, written by a very able and enlightened veterinary surgeon of Birmingham, Mr. Richard Lawrence, and we have likewise a work on 'The Diseases and Treatment of Cattle,' by Mr. Downing. In 1803 a 'Veterinary Treatise,' by Mr. Feron, V.S., 13th Dragoons; and Mr. Ryding's 'Veterinary Patho-

logy appeared.' In 1805 a 'Veterinary Dictionary,' by Thomas Boardman, V.S., 3rd Dragoons; a 'Treatise on Cattle,' by John Lawrence; and a work by Francis Clater, were published. In 1809, Mr. Bracy Clarke's elaborate and enlightened works, viz., 'Dissertation on the Foot of the Horse, with Experiments on Shoeing,' and a 'History of the Bots of Horses,' which has established a reputation for its author, and which will hand down to posterity a name which will ever be spoken of as one of the great luminaries in veterinary science, saw the light.

In the year 1817 Mr. William Dick received his diploma. This gentleman, who was destined to play an important part in the history of veterinary science, and who had received his professional education at the London Veterinary College, under the professorship of Edward Coleman, returned to Scotland. His sagacious mind soon saw the necessity of opening another college, which he did in Clyde Street, Edinburgh, in the year 1818, under the auspices of the Highland and Agricultural Society of Scotland. There is no man who has elevated the character of a profession by dint of industry and ability, in so short a time, and to so high a position, as Mr. Dick has done veterinary science in Scotland. He has continued to perform the duties of professor to the college up to the present time, fulfilling the important and daily labours for the long space of forty-seven years. Where is the man who has done more to advance veterinary science, or to elevate the position of the veterinary surgeon? Whoever knows him, knows a man—a true type of Scotland's sons! He has a large, profound, and practical knowledge on all veterinary subjects, is of unremitting perseverance and industry, and has a determination not to be behind in the noble race, peculiar to the men and their country. He may not have the brilliant eloquence of an accomplished speaker or fluent lecturer, but he has a tact, a property above all properties, of leading and directing the youthful mind up the steep, and rugged, and slippery paths of advancement to the summit of veterinary collegiate education, and of showing him, by forcible truths, the sands and shoals he must avoid, producing a qualified man, who goes forth and proclaims his alma mater and pater noster of veterinary medicine to be the city of Edinburgh. His works are two manuals on veterinary science; and he has likewise written much in periodicals, and was co-editor to the *Veterinarian* for a long time.

In 1823 we have another important explorer in veterinary science brought upon the stage, Mr. William Percivall, veterinary surgeon of the Royal Regiment of Artillery, and afterwards to the 1st Life Guards. I cannot find language to do ample justice to him as one of the most brilliant veterinary ornaments that ever shone. He sent forth his illuminating light to enlighten the ignorant, to refresh and improve the educated, and to show, by eloquent and convincing language, to those that study and pursue the science of veterinary medicine, that it is a high, noble, and benevolent calling. It was in this year that he published his veterinary lectures on 'The Anatomy, Physiology, and Pathology of the Horse.'

In 1832 he published the first, and I think I can safely say, without fear of contradiction, the only work in English, even at the present day, on 'The Anatomy of the Horse,'—a great and meritorious work, thus illustrating what a determined and energetic labourer he was in the field of veterinary science. He afterwards published his beautiful and scientific work 'Hippopathology,' and was for a number of years co-editor of the *Veterinarian*. Here, gentlemen, is a man who deserves our praise for his great talents, and for the intelligent manner he has recorded them for the benefit of succeeding ages. All this time our Royal Veterinary College, under the able and scientific care of Professor Coleman, sent forth every year a large number of educated and accomplished veterinary practitioners who settled in England, Ireland, and Scotland.

I will here give you the great Sir Astley Cooper's opinion of Professor Coleman, uttered at a dinner presided over by him on January 23rd, 1833. In proposing Professor Coleman's health, he said—"He had been acquainted with him forty-five years, and their friendship had never been broken or weakened. During that period he had published a 'Treatise on Asphyxia,' which did him infinite credit. He had been selected as successor to St. Bell, for his anatomical knowledge and his physiological inquiries, and the accuracy of his deductions from the various experiments he had instituted. He had carried the same spirit of inquiry to the study of the horse and veterinary science, and its students were incalculably indebted to him. The profession might be said to be indebted to him, and to him alone, for the rank it held in public estimation; for it was the commission which he procured for regimental veterinary surgeons which proved their passport, and for many a long year the only one they could have, to the highest society in the country."

It is the support of such men, and the advantages which their friendship secures, that raises the dignity and position of a college. Professor Coleman worked, lectured, and laboured for the cause of veterinary science for the long space of forty-six years. He died in July, 1839, after an active and most useful life, at the advanced age of 71.

The successor to Professor Coleman was Mr. William Sewell, who was apprenticed to him in the year 1796, and afterwards became his assistant. Subsequently Mr. Sewell was appointed co-professor, and lastly professor. Mr. Sewell devoted fifty-seven years of his life to the duties devolving upon him in these several capacities, and was professor for fourteen years. "He was not gifted (I quote from the *Veterinarian*) with the high talents of a Coleman, but had an average share of talent, in conjunction with all the requisites of an efficient man of business. He has left an example, after more than fifty years' devotion to the veterinary profession, of a perfect pattern to the rising generation;—an illustration of the success of industry, temperance, and frugality, when combined with integrity and honesty of purpose." Professor Sewell made the grand discovery of Neurotomy in the year 1818, and published and presented the paper to the profession. In 1835 he

introduced a novel operation, by dividing the periosteum for the relief of pain in cases of exostosis. He was also a great advocate for setons. He likewise, I believe, assumed to be the discoverer of the administration of sulphate of copper for the cure of glanders. Such, gentlemen, is a sketch of one who did his best, with his head and his heart, to advance our science, to which he was singly and ardently devoted. Another instance of a long, honorable, and useful life. Death removed him at the advanced age of 72 years. He died on the 8th of June, 1853.

In 1853 Professor Spooner was elected as his successor: a person whose mental acquirements are in every respect well qualified to fulfil the duties of his position. He is a fluent and eloquent lecturer, a good anatomist and physiologist, as well as a clever pathologist. He has devoted the greater part of his life, I may say, to college duties, and has been professor for the space of twelve years. He continues to protect, and advance the interests of our alma mater with a paternal care. He is now ably, and scientifically assisted by Professors Simonds, Varnell, and Tuson, and by Mr. Pritchard.

I should much regret losing the present opportunity of paying a just tribute to the high and sterling merit of such men as the late Mr. Delabere, Blaine, Wm. Youatt, James and Thomas Turner, John Field, W. Karkeck and John Barlow, or to the present Wm. Robinson, W. Goodwin, Wm. Field, Mavor and Brothers, Professor Morton, Professor Stewart, Professor Brown, Professor Gamgee, Wm. Haycock, and Finlay Dunn; who have, by their talents and published veterinary works, assisted greatly to raise the position of veterinary science.

Recently two new colleges have been opened in Scotland, one by Professor Gamgee in Edinburgh; and another at Glasgow, with Professor M'Cull at its head. I could wish that Professor Gamgee had planted his vineyard in our sister-isle in place of Edinburgh; it would, I am sure, have done more good, and advanced the interest of our science, and conferred greater benefit on mankind at large, and have yielded more abundant and wholesome fruit, instead of having the appearance of sapping the vital supplies of an established college which had existed for more than forty years.

Gentlemen, let us now take another survey of our science, and ask ourselves the following questions:—Firstly, Have we made great progress? Secondly, Are we higher in our social life? Thirdly, Is our calling so appreciated by the Legislature as it merits? Fourthly, Do our colleges treat us with that regard our position deserves? Fifthly, Have our colleges made that onward progress they should have done?

First. Have we made great progress? Our ancestors bled, purged, blistered, seatoned, &c., &c., in all diseases. Their impression was, there was an enemy within; that they must reduce the city by taking away its vital supplies, and placing a greater enemy without. Not so in our age. We rarely bleed, and never purge (with aloes) in inflammatory diseases. We husband the vital energies to carry on the

warfare to a successful result, admit pure and wholesome air, and by careful observation inquire whether the city demands extraneous aid, and find out the nature of the supplies required. Look, again, at an open joint. They plastered and bandaged up the inflamed and injured joint. We relieve the active inflammation; afterwards we stop the discharge of synovia, by acting chemically upon the escaping fluid. We certainly do "counter-irritate," but not to the extent which they did. In fact, diseases are now treated more scientifically and much more successfully than formerly. We do not throw in buckets full of medicine, but we regulate our dose and repeat it, so as to have the desired effect in assisting nature's efforts. I think we have good reason to say we have made great progress.

Secondly. Are we higher in our social life? Formerly the farrier and veterinary surgeon was the companion of the coachman, groom, carter, and dairyman. Not so now. We treat these persons with becoming respect; we do our duty, and expect them to do the theirs. We are admitted upon social terms with our clients, and are by the majority greatly respected. Allow me to say that the elevation of our social position is in our own keeping; we must protect ourselves by never shirking to fulfil our duties honestly and fearlessly, and always pride ourselves on being gentlemen. I say, then, that our social position is higher and more respectable.

Thirdly. Is our calling so appreciated by the legislature as it merits? On looking over our history, we do not find in it a lord, a baronet, or even a knight; but if any ingenious man should form a weapon which will be a means of destroying more men, in a given time, and at a greater distance than any in present use, he is honoured by knighthood. Our profession has many members, who have formed many scientific weapons, but they are used for preserving and protecting animal life. Our legislators cast us away, as a ship upon the open sea, without a rudder; we have no privileges and we are not even allowed the same as our sister profession, viz., an exemption from serving on juries. I say they do not sufficiently appreciate our calling or do justice to our profession.

Fourthly. Do our colleges treat us with that regard our position deserves? I think not. If any youth, even if he be a joiner, a mechanic, or a labourer, and has never seen a horse, "pays his fees," he is admitted as a pupil to all the privileges of the college. This should not be. First, he should pass an educational examination, which I am pleased to say the Royal Veterinary College has recently made a *sine quâ non*; and, secondly, he should be apprenticed to a practical veterinary surgeon for three or five years; and alone on fulfilment of these conditions, be admitted to the college duties. By these means we should have more enlightened veterinary surgeons.

Fifthly. Have our colleges made that onward progress they should have done? Thanks be to them, they have sent forth a large

number of intelligent men to practise the veterinary art; but withal we have not a Text-book on the anatomy of the horse, the ox, the sheep, or the dog. We have still to fall back upon Percivall's 'Anatomy of the Horse' (which some of them discard) for the education of our youth. We are obliged to read and consult medical works on physiology, and for information, which we ought to gather from our own professional resources.

Gentlemen, our profession consists of two parts—the scientific and the practical. A judicious practitioner requires a combination of both, as well as a clear head, a quick eye, a steady hand, and a good ear; but to grasp the all-hidden wonders of the universe is beyond the power of our finite mind. I am sure you are all aware that a knowledge of our profession is only acquired by continued labour and application. Work is the beginning, the middle, and the end of our profession; therefore let us work onwards, with firmness and resolution, to raise the standard still higher. Let us make the Lancashire Veterinary Medical Association the place where we can all come and draw from the fountains of practical, intelligent, and well-stored minds. Let us invite our fellow-labourers to come into our field of science, there to meet us as brethren, to lay open the results of their labours, and to set forth the deductions at which they have arrived. Besides which, let us endeavour to maintain, in the combat of debate, the truth of our position and the accuracy of our observation; for, gentlemen, we have yet boundless fields still before us for intellectual exercise and honorable distinction.

The address was listened to with marked attention, and gave so much satisfaction, that the president was requested to allow it to be published in full, with the report of the proceedings. This being acceded to, a vote of thanks, on the motion of Mr. Lucas, of Liverpool, and seconded by Mr. Willliams, of Bradford, was awarded the president for his very eloquent and able inaugural address.

The general business being concluded, and the secretary having read letters from the professors of the college, and others, who had been invited, apologising for their absence, the members and their friends, to the number of forty-five, sat down to an excellent dinner. Among those present were—

Peter Taylor, Esq., president; John Lawson; Thomas Greaves; Cuthbert Simpson; Roger Hampson; James Haslam; William Haycock; George Sermon; Thomas Taylor; Alexander Loonie Gibson; Edward J. Boyle; James Wilson, Federal Army; W. Challoner; D. M'Clean, Army; Alexander Lawson; James Howell; G. Brown; James Taylor; W. Heaps; P. Polding; William Whittle; John Greaves; James Brooks; S. Buckley; W. Williams, Sec. Yorkshire V.M.A.; J. Lord; J. S. Carter; W. Litt; W. A. Cartwright; R. Lucas, President Liverpool V.M.A.; G. Heyes; C. Simpson, jun.; E. A. Friend; J. Morgan, Sec. Liverpool V.M.A.; B. Briscoe; J. Brydon; T. Wood, Ormskirk; Mr. R. M. Mauve, Surgeon; Mr. Bleakley; Mr. Harvey, and others.

After the usual loyal patriotic toasts, the president proposed, in some very appropriate remarks, "*The success of the Lancashire Veterinary Medical Association, and Veterinary Medical Associations generally.*"

The toast was responded to by Mr. T. Greaves, who said—

In rising to respond to the toast, which you have been pleased to designate the toast of the evening, I beg to say that I am fully aware there are many present who could perform this duty much better than I am able to do, but there are none to whom I would yield in a desire to advance the true interests of my profession, or to promote the welfare of these associations. In the few remarks which I shall make I shall take a retrospective view of veterinary medical associations, and say a word as to what is expected from them. During the past year it has been my high honour to preside over your association. We have increased in members from 11 to 33. Our funds also, which were below zero, are now from £30 to £40, and many subscriptions have yet to come in. We have held four quarterly meetings, and ten or twelve special meetings. At our quarterly meetings we have been well supported, and have been honoured by the attendance of the president of the college, the president of the Yorkshire association, and many other eminent practitioners. The success which has been attained is attributable, in no small degree, to the discreet and untiring exertions of our late secretary and treasurer, whose able services rendered my duties a positive delight. I have thought I was doing my profession a service by encouraging and giving an impetus to associations, which tend so much to stimulate thought and develope opinion; and with that object in view I have attended the Yorkshire, North of England, and Liverpool associations; also the banquet at Birmingham and the annual meeting of our own profession in London. I was called upon to speak at each of these meetings upon the subject of provincial associations, which I did, commending them as ably as I could; and the remarks I made at these various places have been deemed worthy of being recorded in the pages of the *Veterinarian*. It is, I think, very becoming and proper that we should occasionally quit the arena of toil and rejoice with those who rejoice. Let us weave a web of kindness, and warm each other by a mutual transfusion of kind feeling to-night. On the last occasion I have named, the mover of the vote of thanks was pleased to say that "I had watched over these associations with a paternal care;" and I am not ashamed to say that I felt my bosom swell with pride and gratitude as I listened to those remarks. I covet no higher honour than the good opinion of my professional brethren. You will be able to form some estimate of my desire for the success of this association as you look upon the banner I now unfurl, and which I now beg to offer for your acceptance; also this reading-desk, and, though last, not least, the portrait of Professor Spooner.

During the year that has just terminated we have had to contend with one of the most formidable strikes of the shoeing-smiths that

ever occurred in our experience, and, thanks to this association, we maintained a steadfast and honorable conduct towards each other, and gained a result so signal and complete that we are now our own masters in our own shops, which was not the case before. We have also better men working for us; they are more obliging and more attentive to their duties, and are not unsettled by, or dominated over by a restless and mischievous club. Amongst the good results of our associating together, this one will shine most prominently. I shall, therefore, with your permission, call it "triumph the first" for our association.

The first paper for the year was introduced by Mr. Haycock, upon "Pleuro-pneumonia in Cattle." The subject was ably handled, and it occupied two nights' discussion. The next was a paper by Mr. Lawson, on "Tetanus in the Horse," which showed an amount of success from his treatment (viz., the recovery of nine cases out of eleven) that had never been attained before. Since Mr. Lawson laid his method of treatment before us, I have had letters from practitioners, announcing their complete success by adopting his system. Let us, then, speak out and accord to him the honour that is his due, and freely hand over to him the laurel branch, and see that the wreath is placed upon his brow. Therefore, with your permission, I will proclaim this as "triumph the second."

The next paper was introduced by Mr. Howel, of Rochdale, upon "Milk Fever in Cattle." It was compiled in a most masterly and practical manner, and is, in my opinion, the best production on that disease in our literature.

The impetus which has been given, and the emulation which has been excited by this association, is not, however, confined within these walls. There is in this town of Manchester a young man whose diffidence and modesty have hitherto deprived us of his appearance in public. I allude to Mr. John Lawson, jun., who is quietly working out one of the most difficult problems of our practice, viz., the cure of canker. To cure even one bad case of canker is no child's play, and many eminent men among us admit their inability to grapple with this disease; but here is a young man whom I have seen cure four cases in succession, and four such cases that I freely admit I should not have been able to cure them at all. I am desirous of giving honour to whom honour is due, and therefore I will say that this is another step in our onward progress, and with your permission, I will call it "triumph the third."

Most sincerely do I congratulate this association upon these substantial results. It is only right and proper that we should be up and doing. It is no idle word I use when I say we live in an age of rapid progress, and that science is making most gigantic strides. We stand upon a loftier eminence than our forefathers did, and I cherish the hope that these associations will stimulate us to fresh vigour, so that the progress we have made shall be maintained. But, sir, much as has undoubtedly been done, there remains much more yet to do. The deplorable dissensions in the profession, which have unfortunately existed for so long a time, must be healed.

It is not for me to say who is the party most to blame. There are parties in London and in Edinburgh whose characters are esteemed by me far too highly for me to even whisper a breath of disrespect; still I feel bound to say that a grave responsibility rests somewhere. So long as the spirit of disunion and antagonism exists between the Highland Agricultural Society and the Edinburgh Veterinary College on the one hand, and the Royal College of Veterinary Surgeons on the other, which has all along operated like a millstone around the neck of the profession, effectually preventing all successful efforts in obtaining either a new charter or any advantageous enactments, I hesitate not to affirm that until a cordial unanimity between these institutions is achieved, the complete success of provincial veterinary medical associations will not have been attained.

Again! There still confronts us a long list of diseases which mostly baffle our best treatment; that they are curable diseases is proved by their yielding now and then to curative measures; and until, therefore, some method has been adopted whereby all such diseases have been made to yield, the complete success of provincial veterinary medical associations will not have been attained.

Again! There exists a vexatious question, one which often appears to blacken the fair fame of our profession, bringing down upon its members ridicule, humiliation, and disgrace. I allude to the incongruous and unfortunate difference of opinion upon points of soundness of horses, and the advancing of these opinions in our courts of law. Do you tell me that it is the result of the different construction and organisation of the mind of different men? Such an answer appears very inconclusive and unsatisfactory to me, for I am bound to say it often appears that we allow the spirit of partisanship to have more power over us in the forming of our opinion than our conscientious convictions, thus causing our very best men to stultify themselves, and to stultify one another. I believe if we will but base our opinions upon broad principles and sound judgment, an approximation to a unanimity of opinion may be arrived at; but until that has been achieved, the complete success of provincial veterinary medical associations will not have been attained.

Among the toasts which followed, were, "*The Professors and the Colleges*," "*The Examiners and Council*," "*The Veterinary Profession in general*," "*The Health of the President and Vice-President*," &c. The evening was spent in a most agreeable and convivial manner, and everything passed off to the perfect satisfaction of all present.

ROYAL COLLEGE OF VETERINARY SURGEONS.

QUARTERLY MEETING OF COUNCIL, HELD JANUARY 17TH, 1865.

PRESENT:—The President, Professors Spooner and Gamgee, Messrs. Broad, Cartledge, Dickens, Ernes, Greaves, Harpley, Harrison, Helmore, Lawson, Mavor, Moon, Robinson, Secker, Silvester, Wilkinson, and the Secretary.

The President in the Chair.

The minutes of the preceding meeting were read and confirmed.

Among the correspondence which occupied the attention of the Council for some considerable time, was:—a letter from Mrs. Gabriel, in which she begged to thank the Council for their kindness in making the usual allowance to her late husband.

It was moved by *Professor Spooner*, and seconded by *Mr. Ernes*—

"That, owing to the death of the late Secretary, the *balance of the allowance* made to him be now paid in full to the widow."—Carried.

A copy of the letter of condolence to the widow of the late Mr. Ellis was read, together with her son's reply, thanking the Council for their sympathy in her great bereavement.

The Secretary next read copies of letters which he had addressed to the editors of the *Hereford Times*, *Bell's Life*, and *Sporting Gazette*, informing them—"that a Mr. W. L. Williams, of Hereford, and a Mr. J. C. Pickering, of Gainsborough, who had styled themselves 'Veterinary Surgeons,' were not members of the Royal College of Veterinary Surgeons."

The Secretary laid upon the table a portrait of Professor Spooner, mounted in a handsome gilt frame, which had been presented to the Council by Messrs. Harding and Co., artists and publishers, 16, Southampton Street, Strand.

It was moved by *Mr. Silvester*, and seconded by *Mr. Secker*—

"That a letter of thanks be sent to Messrs. Harding and Co for their kindness."—Carried.

Two paintings from Central Africa were also laid upon the table, for presentation to the Museum, at the express desire of the late Mr. E. N. Gabriel.

It was moved by *Mr. Lawson*, and seconded by *Mr. Cartledge*—

"That a vote of thanks be given to Mrs. Gabriel for the same."—Carried.

The Registrar reported the following deaths—viz., Mr. E. N. Gabriel, late Secretary of the Royal College of Veterinary Surgeons, whose diploma was dated July 3rd, 1822; Mr. George Smith, Coxhoe, Durham, diploma dated 1862; Mr. Harry Burt, Lewes, Sussex, diploma dated 1856; Mr. Alex. Dunlop, Glasgow, diploma dated 1837; Mr. Thos. Dickson, Durrisdeer, Dumfriesshire, diploma dated 1840; Mr. Peter Campbell, Waltrie, Fife, diploma dated 1843; Mr. Hope Hutchinson, Scone, Perth, diploma dated 1827; Mr. John Hawthorne, Kettering, Northamptonshire, diploma dated 1817; and Mr. Charles James Pyatt, of Nottingham, diploma dated April 30th, 1863.

Professor Spooner referred to Mr. Pyatt, whose death took place from an accident in the hunting field, as being a talented and promising young man, and the son of a distinguished member of the profession, to whom he proposed that a letter of condolence, expressive of the deep sympathy of the Council in his great bereavement, should be sent. This was seconded by *Mr. Cartledge*, and carried unanimously.

The Registrar also reported that 160 copies of the Register, with the *Addendum* and Revised List, had been issued gratuitously.

He likewise reported that three candidates, late pupils of the Royal Veterinary College, had been admitted members of the body corporate. Their names were then read, together with those of the Examiners and ex-officio members who were present.

A letter was read from Professor Morton, suggesting the propriety of placing before the students, at the examinations on Veterinary Materia Medica, samples of the drugs used at the Royal Veterinary College, to test their practical knowledge.

It was ordered, that the Secretary should write to Professor Morton, and inform him that the Council desired to leave the matter entirely in his hands.

The election of a member for the Scotch division of the Court of Examiners in the place of Professor Miller, deceased, was next proceeded with.

It was moved by *Mr. Harpley*, and seconded by *Mr. Robinson*—

"That Professor Syme, of Edinburgh, be elected to fill the vacancy caused by the death of Professor Miller."

On the ballot being taken, Professor Syme was declared to be unanimously elected.

The further considering the question of remuneration to Dr. Struthers was also proceeded with, and the Secretary stated the duties which that gentleman had to perform to the Scotch division of the Court of Examiners.

It was then moved by *Mr. Cartledge*, and secouded by *Mr. Lawson*—

"That Dr. Struthers be elected Secretary to the Scotch division of the Board of Examiners."

It was next moved by *Mr. Silvester*, and seconded by *Mr. Cartledge*—

"That Dr. Struthers be requested to receive the sum of £10 10*s*., in addition to his examination fees."—Carried.

The House Committee, in their Report, recommended that a floor-cloth for the entrance hall, a cocoa-nut mat for the stairs, a new coal-scuttle for the Council Room, and some tea-cups, be purchased, and also that the doors of the Library, Museum, and Students' room be re-covered with baize; that the tables and chairs be repaired, and that the defective brick-work in front of the house be made good, and also that the walls of the back yard be repaired and coloured.

It was moved by *Mr. Helmore*, and seconded by *Professor Gamgee*—

"That the Report be received and adopted."—Carried.

The Finance Committee reported that they had examined the vouchers and receipts of payments during the preceding quarter, and found them correct. The Quarterly Balance Sheet of the Treasurer's Account was read. The liabilities for the Quarter ending January 1st, amounted to £119 14*s*. 6*d*., including Messrs. Garrard's bill for law expenses, which the Committee recommended should be discharged.

It was moved by *Mr. Ernes*, and seconded by *Mr. Broad*—

"That the Report be received and adopted."—Carried.

Cheques were ordered to be drawn for the current expenses.

A letter from Mr. Braby was then read, in which he expressed a wish to withdraw his motion for the present, in consequence of severe indisposition.

It was moved by *Mr. Ernes*, and seconded by *Mr. Wilkinson*—

"That Mr. Braby's motion be postponed until the next Quarterly Meeting."—Carried.

By order of the Council,

WILLIAM HENRY COATES,
Secretary.

Veterinary Jurisprudence.

TORQUAY COUNTY COURT.

(*Before* J. Tyrrell, Esq., Judge.)

A Jury Case.

DISEASED HOCKS.

WHITEWAY AND BALL *v.* TAVERNER.

Plaintiffs, coal merchants, of Torquay, sued defendant, a hay-factor, of Chudleigh, for the recovery of £19 7*s*. Mr. Carter appeared for the plaintiffs, and Mr. Francis for defendant.

Mr. Carter, in a perspicuous address, set forth the case for the plaintiffs, and called—

Mr. William Ball, who said he was one of the plaintiffs in this action, and in partnership with Messrs. Whiteway. He had known the defendant for many years; had done business with him, and thousands of pounds had passed between them. Previous to the 17th of August last he wanted a cart-horse, and, understanding that the defendant had one apparently suitable, a letter was written to the defendant, and the result was that the horse was brought down from Chudleigh to be examined. Plaintiff had a horse to sell, and it was proposed that it should be exchanged for Taverner's, with money to boot. Plaintiff's horse was brought out, and Taverner began to find fault with it; but plaintiff told him that he acknowledged the horse was unsound, and sold him as such, but he should buy his as a sound horse. Taverner's price was £28. It was then agreed that Taverner should take plaintiff's horse and £16 10*s*. in exchange for his own. Plaintiff asked for a warranty, and Taverner replied that he never gave one in his life; and then plaintiff made answer that he had known the defendant too long to believe that he would sell a horse as sound knowing it to be different. He said to the defendant, "Mind, I sell you a horse which I tell you is unsound, and I buy yours which you warrant to be sound;" to which the reply was, "Perfectly so." When Taverner was asked the reason for selling his horse, he said it was a big, heavy horse, and not fit for his journeys. The money was paid, and the horses changed hands. The horse plaintiff bought of Taverner was put to work the next day, and soon after he heard reports from his men that the horse was lame. He left the town for two or three weeks for the benefit of his health, and when he returned he wrote, on the 23rd of September, to the defendant, and said, "The horse you sold me is still lame; we should like to see you when you come to Torquay next time." To this Taverner replied, "The horse you had from me was never lame while in my possession." He wrote again on the 27th of that month. After some time the defendant came, bringing a farmer and two or three

men to prove that the horse was not lame during the time he had it. The horse could not do its work properly. He offered to leave the dispute to two respectable veterinary surgeons or farmers for settlement, and defendant would not agree to it.

Plaintiff was cross-examined at great length by Mr. Francis. He did not recollect asking Taverner for a receipt. He was sure Taverner did not say, "I will not give you a receipt without you give me a warranty." He had perfect faith in the defendant, and took the horse on his word; had he been dealing with another man, he should have employed a veterinary surgeon to examine the animal. It was not true that one of his men took the horse to draw a load of coal up a steep place, and thereby lamed it.

Mr. William Whiteway was examined, and said he asked Taverner if he would warrant his horse as sound, and he said he would. Was present when the settlement was made, and heard Mr. Ball ask if defendant would give a written warranty; he said he would not do that, and then, when asked if he would warrant the horse sound, he said, "Perfectly so;" upon that the money was paid. The further evidence of this witness was in corroboration of the former.

Mr. Ferris, veterinary surgeon, said he saw Taverner's horse at the Newton Midsummer Fair. Mr. Farrant was disposed to buy it, and asked him to examine it. He did so, and found the off hock much diseased; the disease was of long standing, and was not curable. The horse would always be worse after hard work. In consequence of his statement Mr. Farrant declined to buy it. Witness saw the horse again in July; it was then very lame, the lameness proceeding from the disease. After it had been in the possession of Messrs. Whiteway and Ball about a month he was requested to examine it, and it was diseased as before. It had since been sold by auction, and was now the property of a person at Totnes.

John Cooper, a carter in Messrs. Whiteway and Ball's employ, deposed to the fact of the defendant having warranted the horse as sound. The horse was employed to draw half a ton of coal—a ton was the usual burthen—the same day it was purchased. There was nothing amiss apparently with the horse then, but when it was taken out of the stable the next morning the witness noticed that it was lame.

Cross-examined by Mr. Francis.—Never told one of Taverner's men that "the horse took some coals to a bad place, and so became hurted."

Mr. Farrant stated that he was struck with the appearance of the defendant's horse at the Newton fair, but he did not buy it in consequence of Mr. Ferris's representations.

His Honour reminded the lawyers engaged in the case that he intended to go home that night, and that it would be necessary to adjourn the case.

Mr. Francis said they were in his Honour's hands; the case for the prosecution was not completed, and he had six witnesses to call for the defence.

Mr. T. Shapley deposed to seeing the horse at the Newton Fair, and observed the enlargement of the off hock.

Mr Buckland, auctioneer, proved selling the horse, by the instructions of Messrs. Whiteway and Ball, for £10.

Medway, a cellarman, deposed to the lameness of the horse the day after it was purchased, and also to the verbal warranty given by the defendant.

Cross-examined by Mr. Francis.—When the defendant came about the horse, he said he had had it for four or five years, and during that time it had never wanted the farrier, and that "it had never been sick or sore."

William Drake stated that he saw the horse "hobbling" out of the yard of the White Horse at Newton before it was purchased by the plaintiffs.

This was the case for the prosecution.

His Honour said Mr. Francis had better not go on with the defence to-night, and suggested that it should be adjourned to the Newton Court on Monday.

Mr. Francis was afraid that would not suit him.

His Honour said he would go on for another hour, but he must leave at four o'clock.

Mr. Francis then addressed the jury for the defence, and said it was very disagreeable to feel that a case of this sort had to be determined in so short a time; he would endeavour to be as brief as possible consistently with the duty he owed to his client, but he should not sacrifice his interests by any undue haste in the matter, because the money part of the question was nothing compared with his client's good reputation, which he was desirous of preserving. Mr. Taverner was not a professional horse-dealer, but a man who wished his word to be as good as his bond. Mr. Francis then made a long and forcible speech, in which he contended that the first proposition for a deal came from the plaintiffs; that the horse was not warranted by defendant; when asked whether the horse was sound, he said "As far as I know;" and proceeded to add that it had been in his possession four or five years, and had never been treated by the farrier. This conversation he had endeavoured to draw out of the plaintiffs and their witnesses, but none of them recollected hearing anything of it except the cellarman, Medway. He also expressed a hope that the jury would bear in mind that no complaint was made about the horse until some weeks after the purchase, and intimated that the heavy work of drawing tons of coals over the steep hills of Torquay was the true cause of the lameness.

He called *Mr. Dyer*, veterinary surgeon.

Mr. Francis.—You are practising as a veterinary surgeon at Torquay?

Mr. Dyer.—I am.

Did you examine a horse for Mr. Taverner?—I did.

When did you examine him?—On Saturday week.

Was he unsound?—He was unsound in the hock.

What is the nature of the unsoundness?—The small bones of the

hock are cemented together by bony deposits, and so is the inner small metatarsal bone to the large.

Of what nature is the soft swelling seen near the hock?—These swellings are termed enlarged bursæ.

When situated a few inches above, what is it called?—Thoroughpin.

Do these swellings produce lameness?—They do, but not in the present instance.

How long has this disease existed?—Probably for a long period; it is difficult to state when the disease commenced.

The horse is lame?—Decidedly lame.

I suppose the disease mentioned, between the bones, would not be likely to meet the eye of ordinary persons?—It would require a very skilful person to detect it; it must be searched for by the hand.

Mr. Carter cross-examined Mr. Dyer, but the evidence of this witness had been given in such a plain and straightforward manner that the cross-examination was merely nominal.

Although Mr. Dyer was engaged by the defendant to examine the horse and give evidence for defendant, it was found that his testimony was not calculated to serve the defence.

His Honour here stopped the case, and said he should adjourn it to Monday, at Newton.

At the adjourned meeting six additional witnesses, including the defendant himself, were examined for the defence. The defendant's evidence went to show that he did not warrant the horse; that is, in making the bargain, he did not use the words "I'll warrant him." He might have said "He is sound as far as I know."

The other witnesses spoke chiefly of having known the horse for some long time, and never knew of his being lame.

His Honour summed up; after which the jury returned a verdict for the plaintiffs.—Damages, £10.

CIRENCESTER COUNTY COURT.

(*Before* J. Francillon, Esq., Judge.)

ALLEGED MALPRACTICE, AND NEGLECT OF PROPER MANAGEMENT OF A HORSE.

WILLIAM HENRY MOGG *v.* THE ROYAL AGRICULTURAL COLLEGE, CIRENCESTER.

IMPORTANT CASE.

Mr. Edlin, barrister-at-law, instructed by Messrs. Bevir and Ellett, appeared for the plaintiff; and Mr. Millward, barrister-at-law, instructed by Messrs. C. and C. W. Lawrence, appeared for the defendants.

The action was brought to recover the sum of £50 as damages for the breach of the several agreements following, entered into by them with the plaintiff on or about the 12th day of May, 1864,

that is to say, first, to take due and proper care of a certain gelding belonging to the said plaintiff, and placed by him under the care of the said defendants, at their Veterinary Hospital, at Cirencester, for the treatment and cure of a certain lameness of the off hind leg, from which such gelding was suffering; secondly, to supply such gelding with proper and sufficient food and bedding, and all other necessaries (except corn) during such time as it so remained under the care of the said defendants; thirdly, to use competent skill in the treatment of the said lameness, according to the most approved practice in such cases. Which said several agreements were entered into by the said defendants with the said plaintiff, in consideration of a certain weekly sum of 9*s.* per week, agreed to be paid to them by the said plaintiff, and which said sum hath been paid during such time as the said gelding remained at the said hospital. And the plaintiff will avail himself of these particulars, either for the recovery of the said sum of £50, or any part thereof, as the value of the said gelding, or for the recovery back of the sum of £4 1*s.* paid to the said defendants under the said agreements, together with such further sum (not exceeding with the said sum of £4 1*s.*, the sum of £50) as the plaintiff shall have paid for the keep and maintenance of the said gelding to the commencement of this action.

Mr. Milward pleaded, first, not indebted; second, that there was no contract; and third, that no damage had been committed.

Mr. Edlin opened the case at great length. About the 11th or 12th of May in the present year the plaintiff had a bay gelding, which had been suffering for about a fortnight from slight lameness in the hind off leg, and had been treated for a sprain. He saw Mr. Murray, the professor of veterinary surgery at the Royal Agricultural College, and agreed with that gentleman to send the horse to the College hospital, there to be treated for the injury and kept. He agreed to pay 9*s.* a week—2*s.* for lotions and bandages, and 7*s.* for keep. Upon the 12th of May, Mr. Mogg sent the horse from Fairford to Cirencester. It had been gradually getting better, and there was every prospect of a speedy recovery. On the 13th of May the horse was taken from the inn at Cirencester, where it had stayed all night, to the College hospital, and there consigned to the care of Mr. Murray. About this time Mr. Mogg left Fairford, to go to Weston-super-Mare. On the 21st May he wrote to Mr. Murray, and asked how the horse was getting on. He received a letter in reply, dated the 23rd of May, in which Mr. Murray said the malady was more serious than he imagined, but the lameness was diminishing, and in about a week or ten days he should apply a blister, and in about two months the horse, he expected, would be well. It was clear from this letter that Mr. Murray expected that the inflammation would be over in about a week or ten days. It was certain that he deemed the horse a curable one at that time. Relying upon that report, Mr. Mogg did not take any further steps then, but on the 24th June he happened to be at Cirencester, and went to the College to see the horse. He found the horse in a state so reduced that it was hardly recognisable. Mr. Edlin here gave a

description of the horse, &c., similar to that narrated by plaintiff in his evidence. Mr. Mogg asked who was the superior authority at the College, to whom he could complain. He was told by Mr. Murray that Mr. Constable was the principal. Upon the 25th June, on getting back to Weston-super-Mare, he wrote to Mr. Constable, and stated that he should demand redress. Mr. Constable wrote in reply, on the 28th of June, that he had only received the letter that morning and that if the plaintiff had suffered any wrong there would be no difficulty in the matter. Mr. Constable added that he knew nothing of the case at present, but would make inquiries. On the 6th July, Mr. Constable wrote again to Mr. Mogg, stating that he had heard the particulars of the case from Mr. Murray, and found that the horse had been suffering from a chronic and serious disease, the treatment for which had not resulted, as it happened, in a cure. Mr. Constable stated that the College solicitors were Messrs. Lawrence, of Cirencester. On the following day Mr. Mogg received a letter from Mr. Murray, requesting the horse to be removed. In consequence of receiving that letter, Mr. Mogg, on the 11th of July, removed the horse. He then found that the horse had been treated better than when he saw it on the 24th June. It had had better food. Mr. Mogg took the horse away, and paid the College charges, £4 1*s.*, under protest. Mr. Edlin referred to the evidence of the veterinary surgeons whom he should produce, and said it was now incurable. He remarked upon this fact, in connection with the first letter from Mr. Murray, to the effect that it was going on favorably. On the 14th July Mr. Mogg wrote to Messrs. Lawrence, the solicitors to the College, informing them that the horse had been removed at the request of Mr. Murray, and it was now at the risk and expense of the College. On the 15th July Messrs. Lawrence briefly acknowledged the receipt of the letter; and on the 16th July a letter was received from Mr. Constable asking for explicit information as to how and when, and by whom the horse had been ill treated, and adding that he could not suppose that plaintiff's only complaint was that the treatment had not resulted in a cure. Mr. Mogg immediately wrote at length to Mr. Constable. On the 16th July Messrs Lawrence wrote to Mr. Mogg, and informed him that they had found on inquiry that the case was one in which the College was not concerned. Mr. Murray was, it was true, the veterinary surgeon at the College, and he was allowed the use of the hospital gratuitously, but the College had nothing to do with his private practice. Messrs. Lawrence stated that they had seen Mr. Murray, and that that gentleman had no doubt of the horse's recovery if it had remained under his care. Mr. Mogg replied to Messrs. Lawrence, and stated that he knew nothing of the private arrangements with the professors, and he should hold the College responsible. On the 19th of July, Mr. Constable wrote to Mr. Mogg, stating that all the patients at the College hospital were well looked after, and that, as far as he remembered, the horse was never considered otherwise than as a hopeless case. Mr. Mogg again wrote to Messrs. Law-

rence, and expressed surprise that it should have been attempted to shift the responsibility. He asked who were the proper parties to sue. Messrs. Lawrence, in their letter of the 1st August, said, by the College charter, the institution might sue or be sued under the name of the Royal Agricultural College. They cautioned Mr. Mogg, however, that the College were not responsible for the treatment of any animal sent to their veterinary hospital. Mr. Edlin concluded the reading of this long correspondence, of which the above is the merest outline, by ridiculing the attempt to remove the responsibility from the College, and stating that the damages the plaintiff claimed for his valuable horse being rendered incurable by the defendant's neglect were not more than he was fairly entitled to. Mr. Edlin then called the following witnesses:

Mr. William Henry Mogg deposed—I am the plaintiff in this action, and in the spring of this year I resided at Fairford. I was at that time possessed of a bay gelding. This horse became lame in the month of May. About the beginning of that month I had ridden it and hunted it, and it went perfectly well. One morning I found it was lame, and I had hot and cold water applications made, the same way in which I have treated other horses. It was lame with the off hind leg. I applied fomentations. It had been lame about six months previously, and I cured it myself, and it had become perfectly well. I called in Mr. Blunsom, V.S., to see the horse on the first occasion, but my man could not get the balls down his throat, and the horse never took any of the medicine. On this last occasion I employed lotions, and the horse was improving every day. I had taken it into the field to see how it walked, and I found it improved every way. I intended to go to Weston-super-Mare, and wishing to place the horse somewhere where it would be taken care of, I saw Mr. Murray, who is the veterinary surgeon attached to the Royal Agricultural College. I saw Mr. Murray, and we discussed the terms. I wished to see the hospital accommodations, and went there. They appeared to be satisfactory to me, but I saw a quantity of loose stones lying about the yard, and I said "These must be removed." I said this to Mr. Murray. He promised me they should be removed. We then agreed as to the terms on which the horse should be placed there, at 9*s.* a week; 7*s.* was to represent the charge for the keep, and 2*s.* for lotions and bandages, or what might be required. We were both of opinion that corn would not be required. I believe I told him everything that had occurred to the horse. I sent the horse to Cirencester, which is a distance of seven or eight miles from Fairford. The College man fetched it from Cirencester to the College. The horse had not suffered from the journey to Cirencester, as far as I could see—its lameness did not appear to have been increased. In consequence of certain circumstances, I went to the College hospital on the 24th June. I went into the stable where the horse was, and saw the attendant. My first question was: "How is the bay horse getting on?" He said, "I am sorry to say, sir, very badly." He then conducted me to the place where the horse was. It was a loose box. I never saw a

more deplorable condition than the horse was in. I hardly recognised the horse. He had a peculiar tail or I don't think I should. He was excessively poor in condition, as poor as a horse could actually be short of being starved. I observed that the ribs were very nearly protruding through the skin. The hair of the horse's tail was disappearing, from mange, as I imagined. There were several sores about his body—about his hock, and about the body generally. In one corner of the loose box there was some rubbish, something between hay and grass, but it would puzzle a farmer to know what it was. There was an insufficiency of straw to prevent him hurting himself or meeting with an accident. In consequence of what I saw I remonstrated with Mr. Murray on the condition of the horse. I drew his attention to the insufficiency of the straw, and to the state of the yard; to the state of the horse's leg and tail, and to the general treatment of the horse. Mr. Murray said, as to the insufficiency of the food in the corner, which I have described as neither hay nor grass, that it was as good as the College could afford for the money. As to the mange, he did not deny that it was mange, but said; "it might have arisen from insufficient exercise. As to the leg, I referred him to his letter of the 23rd May, and asked him how he accounted for the present state of it. He stated that the horse would have been well but for an accident. "Accident!" I said; "it is no wonder that the horse has met with an accident, looking at this straw and the state of the yard." He told me that the horse had slipped up and hurt his leg. I said I could not let the matter remain as it at present stood, and asked for a reference as to the responsible authorities at the College. He gave me the name of Mr. Constable, and I said the horse should not stop there another day or another hour if it was fit to move. I then left. I wrote to Mr. Constable. On the 11th of July I went to the College, and removed the horse. It was then eating corn, and was clean and burnished up, and looked in a much better condition. I drew Mr. Murray's attention to the state of the horse's leg, and I paid the charges, £4 1*s*., under protest. The receipt is produced. I paid the money at the hospital, but he had not a receipt stamp, and he promised to send the receipt. He sent it to the King's Head. I took the horse away, and went by the side of it over to Can Court. I read the paper now produced (the bill) at the hospital. It was done in a hurry, and I only saw the figures. I did not see the name. I had the horse taken to Can Court to Mr. Bedford's, where Mr. Blunsom happened to be. The horse's leg was much worse when it left the College—it was double the size of what it was when it went there. I should think it walked better than it did before going to the College. The distance of the hospital from Can Court is about three miles, and it was much distressed when it got there. Mr. Murray told me that the horse had been blistered twice. Mr. Bryer, of Cheltenham, a veterinary surgeon, has seen the horse. I believe the horse to be perfectly useless. It is too lame to walk. It was six years old last spring. The horse is now at Cheltenham.

Cross-examined.—The horse is at the Queen's Hotel stables, and

it was removed there about three weeks ago. It was in my possession till that time, and it is so now. I keep horses, and occasionally hunt. I know about horses. I have cured this horse on one occasion. It was then under my care five weeks. It was then lame with the same leg as it is now. Mr. Blunsom was called in to see the horse, and I asked him what his charge would be. He told me that his usual charge would be *7s.* *6d.* for examining the horse, and *7s.* *6d.* for the journey, which I paid him. He told me that it was a sprain; the leg was swollen, but it was not a large swelling. It was lame for some weeks. I knew Mr. Montgomery as a brother sportsman. I went to Mr. Montgomery's stables, and there met Mr. Murray. I went to the hospital a few days afterwards. I was shown some loose boxes, and I selected a loose box with a yard, and said I should like that box. I was promised that the horse should be put there. I wished particularly that there should be a yard, and selected this one. I never saw Mr. Constable about it. The hospital is at some distance from the College. When I made the contract with Mr. Murray, I did not ask him who was the responsible party at the College with whom I could make a contract. On the 12th of May, when we made the agreement, Mr. Murray and I spoke of the College, as to the College being the responsible parties, over and over again. He spoke of the price the College would require, and the treatment the College could afford. He always put it that way. I always considered that I was dealing with the College. He told me that the College would have *7s.* a week for the food, and *2s.* a week for the lotions and things that would bé required. That I distinctly swear was what I understood to be the arrangement. I did not know that Mr. Murray practised on his own account, except as the officer of the College. When Mr. Montgomery introduced me to Mr. Murray he said, "Here's Mr. Murray, the veterinary surgeon of the College, who will look after your horse." I asked Mr. Murray what would be his terms, and he said what it would be to include corn. I said it would not be necessary to give him corn, and therefore a new tariff was mentioned—*7s.* a week for the food, and *2s.* for the lotions. At that time Mr. Murray had not seen my horse at all. Mr. Murray asked me the nature of the lameness. I told him, I daresay, that I noticed his lameness one morning, and that I did not know the cause. I cannot say positively that I said this, but I daresay I did. I daresay I told him that the lameness was of a trivial character. I agreed to send it to Cirencester the next day. I saw the horse in the stable at Cirencester, and I saw it when it was fetched away by Mr. Murray's man. The horse was very lame. I did not see it afterwards for some weeks. On the 21st May I wrote to Mr. Murray, and received his reply. On the 24th June I saw the horse; it appeared to be mangy, his tail disappearing, and the horse generally very bad. His ribs were nearly protruding through the skin. There were sores on his body, and one on his hock. There were a lot of sore places—I cannot say how many. I believe the sore on the hock was raw—it was an abrasion. The sores on the body were also abrasions, not very

deep. If the horse had been rolling, and had come in contact with a wall, the sores might have been so produced. If the horse had rolled against a wall, he may have scratched himself. I was told by Mr. Murray or the man that the horse had slipped up. I daresay that he told me also that the horse rolled, and in rolling came against the wall. When in my stable, for a week or two before he was lamed, the horse had been groomed, and kept in condition. He was fed with hay and grass, and it might have been a little corn. He was not turned out; it was kept in a loose box, in a cool stable. I am almost certain we had taken his clothes off. When I found the horse in such a bad state on the 24th June Mr. Constable was not at the College, or I should have gone to him. I told Mr. Murray on that day that the horse was of no use. He said the only thing left to do was to fire him. I said I should certainly not have it fired then. Mr. Murray did not tell me to take the horse away then. I said if the horse was capable of being taken away, I should take it. I did not fetch it away until Mr. Murray had desired me by letter, dated the 6th July, to do so. Directly after I got that letter I had it taken away, and paid his bill under protest. When I received the letter of the 6th July there was no bill enclosed with it. I did not go for the horse till the 12th July. The bill produced was made out and handed me by Mr. Murray without a stamp. Two items in the bill are for shoeing and removing. I objected to those items. I am prepared to swear that I did not go into that bill, except as it related to figures. I read "To the keep of horse from 13th May to this date, treatment included, at 9*s*. a week, £3 19*s*." The date previously is July 12th. The sum total of the bill is £4 1*s*. I objected to pay the items for shoeing and removing, 2*s*. Mr. Murray had no stamp, and he sent the bill to me receipted at the King's Head. When I had the horse fetched away I walked with it to Can Court. It was the same day that Mr. Blunsom saw it. Mr. Murray might have told me on the 12th July that he found the horse was lamer than I had represented, and I daresay that I told him that the horse had been lame in the same way before, and I had cured him myself in five weeks. I did not say that I recollect that the College must take to the horse, and pay me for it, but I might have done so. I told him that I should bring the matter before the Court; it would necessarily follow that it would be published throughout the whole county, but I don't think I made use of these words. I saw the man at the College on both occasions, on the 24th June and 12th July, and I did not say that I would bring the College to the ground. I said I should sue the College.

Re-examined.—Until I received Mr. Lawrence's letter, on the 16th July, I did not know that Mr. Murray carried on a business at the College separate from the College.

Charles Miles.—I was a groom in the employ of Mr. Mogg at the beginning of May in this year. This bay gelding was then in my charge. I remember his becoming lame. I kept wet bandages on to cure his lameness. So far as I could judge, they did him

good. I remember when he was taken to Cirencester, to go to the College. He was then improving. He bore the journey from Fairford to Cirencester very well. He was in very good condition at the time, and was progressing towards recovery. I did not see him at Can Court. I saw him at the College the day after Mr. Mogg had been there, the 25th June. He was then very thin, and had a very short tail, as though he had the mange. He had been rubbing his tail, as a horse would if it had the mange. I noticed a sore place on the hock. The horse was in a worse condition, and his lameness was much the same. He was certainly not any better. I have not seen him since.

Cross-examined.—I am not now in Mr. Mogg's service. Mr. Mogg sent me to see the horse on the 25th June, at the College. I only saw one sore place on his hock at that time. The skin was off. Horses sometimes roll, and if this one had rolled against a wall this sore might have been so caused. I had the horse in my care, in a nice box, before its going to the College, and fed it on hay and grass, and not corn.

Charles Wall.—I went with the last witness to the College, to see this horse, on the 25th June. I noticed that the horse was in a very bad condition, and that he had a raw place on the hock, and one or two sores on the body. The ribs were very poor, you could count them. The tail looked very shabby, as though the horse had got the mange, and had been rubbing itself.

Cross-examined.—I am a groom, and now out of a situation.

Mr. Thomas Bedford, jun., deposed—I am a farmer, living at Can Court. The horse was brought to our farm from the College. Its leg was swollen, and the horse was lame. It appeared to be in great pain. Three weeks after the horse had been with us it gave out a discharge in the leg where the inflammation was. No one treated him. Mr. Blunsom was in the turnpike-road when the horse came, but he did not examine him. The horse was with us a month before there was any improvement. During the time he was with us he met with no accident to retard his recovery. If the horse was sound it might be worth £40.

Cross-examined.—Nothing was done to him, but after the three weeks there was a discharge of matter. We had 6*s.* a week for his keep in a grass field for three weeks. We kept the horse at grass after that, at 7*s.* He then went into the stable for about three weeks, and we were paid 18*s.* a week.

Mr. John Blunsom, veterinary surgeon, deposed—I live at Cirencester. I happened to see this horse on the 11th July last, when it was going to Can Court. Mr. Mogg's man was leading it. I saw the horse was lame, but I was not within twenty or thirty yards of it. I made no examination then, but I did on September 11th, and I then found that the horse trotted sound on the grass, but there was an enlargement of the fetlock joint of the off hind leg. It was impossible to say whether it was curable, but I told Mr. Mogg that the only remedy was firing, and that might set it up again, though it might not reduce the enlargement. He was not

lame on the grass. Assuming the inflammation to continue, blisters should not have been applied. A discharge is not necessarily a sign of inflammation; inflammation might be removed by a discharge of matter.

Cross-examined.—I did not see the matter. I have been in the Court, and heard the previous witnesses. I had the horse under my care last December, for a sprain of the tendons of the fetlock joint of the off hind leg—the same leg. I only saw the horse once, and gave an opinion, and sent medicines and applications. I explained the treatment it would be advisable to pursue. Mr. Mogg spoke of paying the expense of my journey, and thought of continuing his own treatment. I said I should charge 7*s.* 6*d.* for an opinion if I supplied no medicines. I supplied some medicines, however, and did not charge for the opinion. A second bottle of medicine was returned by Mr. Mogg, as not wanted. It was about half empty, and Mr. Mogg asked me to make an allowance for the portion not used. I did not see the horse again until the 11th September.

Re-examined.—I saw the horse after his lameness in December. I saw him hunting; he was not lame, but I think there was a little enlargement present.

By his Honour.—On the 11th September I only trotted the horse on the grass, but it was hard ground, and I thought the trial a sufficient one.

Mr. William Bryer, of Cheltenham, veterinary surgeon, deposed—I am a member of the Royal Veterinary College, and have been one of its vice-presidents. I have seen the horse in question. There is a considerable enlargement of the lower part of the off hind leg. I saw it on the 24th October last. This enlargement appeared to have been caused by a sprain of the back sinews—a tension of the flexor tendons. I have heard the plaintiff's evidence, and listened to the reading of the letter from Mr. Murray, of the 23rd May. I think the horse, from that letter, was in a curable state at that time. In my judgment, if the horse had been treated with proper skill, he would have been curable in three or four months. I have heard the plaintiff's evidence of the size of the leg when it left the hospital, on the 12th July, and I cannot understand how it could get so much swollen under proper treatment for the complaint described in Mr. Murray's letter of the 23rd May. It is not proper to blister a horse before the inflammation had subsided. Assuming that there was a discharge after blistering, then blistering again would be improper. I should think the first blistering not proper treatment. Firing would be the *dernier ressort*, a last resource. The horse is not now curable—it is a hopeless case. I told Mr. Mogg so at once. The present state of the horse is not consistent with Mr. Murray's statement mentioned in Mr. Lawrence's letter, that if it had remained at the College it might have been cured. He may be made just sound enough for slow work on a farm, but not for hunting or riding. Firing is now of no use at all. The discharge mentioned by Mr. Bedford might have proceeded from inflammation. Assuming that the horse was sound, I should estimate its value at £40 or £50.

The turning out of the horse to grass at Mr. Bedford's was a proper course to adopt.

Cross-examined.—I did not see the horse on the 24th October. I have only formed my opinion of the treatment of the horse at the College from the letters which have been read.

Mr. Bedford, recalled by his Honour.—The discharge was of a yellow, oily substance, and it appeared to come from the fetlock joint—from the swelling. I saw it three times on three separate days, and there were intervals of several days when no discharge was going on.

Mr. Bryer, recalled by his Honour.—I should think the discharge proceeded from the suppurative action which had been set up.

This was the case for the plaintiff.

Mr. Milward submitted that the College was not liable, and that he was therefore entitled to a nonsuit. At the Royal Agricultural College there were several professors who delivered lectures to the students; but however valuable those lectures might be, it was very desirable to add to them practical instructions in the various sciences taught. Mr. Murray was the professor of veterinary surgery at the College; and for the advantage of his class, and to increase his emoluments, he was allowed to practise his profession. The fees which he might receive in the course of his practice wholly belonged to himself. Mr. Murray was in no sense the agent to the College. His Honour had seen the bill which had been produced by Mr. Mogg. The debt was stated to be due to Mr. Murray, and Mr. Murray gave a receipt in his own name. Mr. Murray was ready and anxious to meet this case, but he (the learned counsel) contended that a nonsuit must be entered as far as the present defendants were concerned. Mr. Murray was not a mere adventurer; he was a gentleman of great ability in his profession, and who had been carefully selected for the important post which he held by the noble lords and gentlemen who formed the Council of the Royal Agricultural College. Mr. Murray had a complete answer to the case, but he (Mr. Milward) should at the present moment confine himself to the question of nonsuit, to which the College, he contended, was entitled.

His Honour said that in order to give Mr. Milward an opportunity of disputing his decision on the point raised, in case he should hereafter think fit to do so, he had put down his judgment in writing; but before he read what he had written he would just glance at the premises. He found that this was a College for students of agriculture. He found that it was a very advantageous thing for students to enjoy the assistance of the veterinary professor, to see with him the patients in the hospital, the treatment they received, and their anatomical state after death. It was a very great advantage to have such a place as the College hospital, and it appeared to him that the authorities had provided it for the very reasons he had mentioned. He did not find that it was any part of their plan that the veterinary professor, being also a veterinary surgeon, should make a place for private practice. He found

Mr. Murray speaking of the College as to what the College would require, or what it could afford; and he could not understand the position in which the defendants wished to place him, as simply a veterinary surgeon connected with the College. It was said that his emoluments were so small that he was allowed to increase his income by private practice; but he could not see where Mr. Murray's fee was to come from out of the money paid by the plaintiff 7*s.* a week for keep, and 2*s.* for medicines. He did not see much importance in the bill being made out in the name of Mr. Murray. If the College were the contractors with Mr. Mogg in the beginning, the fact would not be altered by their agent writing something else afterwards and giving it to Mr. Mogg. This was what he had written down. He thought the right inference from the evidence for the plaintiff was that for the instruction of the students the defendants maintain a veterinary hospital, and employ a veterinary professor as their agent for that purpose, and that this action is maintainable against them, as upon the contract made by him as their agent.

His Honour said he should not go on with the case at that late hour, as there was no probability of finishing it in a reasonable time. He would appoint a special Court for hearing this case, and also another horse-case, which must likewise be postponed.

The Court then rose.

(*To be continued.*)

OBITUARY.

J. Hawthorne.—Died, at his residence at Kettering, on the 2nd January, 1865, after a long and severe attack of paralysis, Mr. John Hawthorne, M.R.C.V.S., much and deservedly respected.

There are probably few men who have passed through life with more credit to themselves, or who have been more useful in their generation, than Mr. Hawthorne. Active, energetic, and blessed for many years with health which no exertion seemed to injure, Mr. Hawthorne was eminently calculated for the duties of a provincial veterinary surgeon. He was the son of a much-respected member of the "old school," whom he succeeded on obtaining his diploma, in 1817, and by his great attention and ability soon made a very large provincial practice. A brother, much younger than himself, joined him, about 1844, in conducting the business; but dying a few years afterwards, the whole of the labour was again thrown upon him. It proved, however, too much for his strength, and he was attacked in a very short time with

paralysis, which prevented active duty ever afterwards. Nevertheless, until the last year or two he took a great interest in the progress of his profession. The pages of our Journal contain several interesting and instructive papers from his pen; among the best is one on "Taking up the Jugular Vein."

Charles J. Pyatt.—We deeply regret to have also to record the death of a young and rising member of the profession, Mr. Charles James Pyatt, of Nottingham, at the early age of twenty-two, from injuries received in the hunting-field. It appears that on the 28th of November last Mr. Pyatt was out with the Quorn hounds, and, whilst taking a fence, his horse fell, and threw him with great violence on the ground, inflicting several severe injuries to his head. He was removed to the house of Mr. Marsh, a publican, in the village of Boughton Sulney, where he was promptly attended by a surgeon in the neighbourhood, and afterwards by Mr. Joseph Thompson, of Nottingham. At first little or no hope was entertained of his recovery; but after a few days his symptoms became more favorable, and it was thought he might recover. These anticipations were, however, not permitted to be realised, for, after lingering nearly five weeks, he died on Friday morning, January 6th. His death is a very melancholy one, as he gave promise of taking a high position in his profession. While at College he gained the second position for the Coleman prize, and was, as such, awarded the Bronze Medal. His professional acquirements and unassuming manner had already won for him the goodwill and respect of a large circle of friends, who now mourn his loss.

W. Woodman.—In addition to these deaths, we find in the monthly Military Obituary the following:

Veterinary Surgeon William Woodman, half-pay, 2nd Dragoon Guards. Mr. Woodman's diploma bears date June 30th, 1812.

ERRATA IN NO. 445.

Page 34, line 7, *for* "the necessity of administering all agents," *read* "the necessity of *carefully* administering all agents."
„ 46, line 5, *for* "Walker's," *read* "Walker Watson's."
„ 72, line 27, *for* "Wreghemlez, Bruxelles," *read* "Cureghem by Brussels."
„ 72, line 34, *for* "Messrs. Branley and Reynal," *read* "Messrs. Bouley and Reynel."

THE

VETERINARIAN.

VOL. XXXVIII. No. 447. MARCH, 1865. Fourth Series. No. 123.

Communications and Cases.

ON SOME OF THE DISEASES OF THE RESPIRATORY ORGANS OF THE HORSE AND OTHER ANIMALS.

By Professor Brown, M.R.C.V.S., London.

(*Continued from p.* 691, vol. xxxvii.)

Sounds produced during Respiration, consequent upon Chronic Derangement of the Air-tubes.

In the course of previous remarks upon the subject of abnormal sounds in the breathing it has been asserted, as an obvious consequence, that any obstruction in the interior of a tube would cause a modification in the sound produced by the forcible passage of air through it; and further, that the character of the alteration would depend upon the nature, position, and extent of the obstruction.

These observations apply equally to instances of temporary or permanent disease in the respiratory tubes of the horse or other animal. The occurrence of temporary disturbance has already been discussed, and it remains to notice the characteristics of those cases of abnormal sounds which, in the ordinary course of things, are likely to be permanent.

Confirmed roarers or whistlers are distinguished without difficulty from temporary ones, save in very rare and peculiar cases. The animal has all the appearance of good

health, his appetite is perfect, and everything about him indicates freedom from active or recent disease; there may be, indeed often is, cough, but of such a character that it is at once recognised as chronic; and, taking into account all the circumstances of the case, there is little or no danger of error in concluding the unsoundness to be confirmed; very seldom will any difference of opinion arise upon that point. The cause of the unsoundness, however, is quite another question, about which any amount of speculation may be advanced, but very little practical knowledge gained.

It would be something if the position of the obstruction could be determined, but the most careful auscultation fails to convey to the mind any idea of the whereabouts of the origin of the sound. In different parts of the respiratory track the intensity of the noise will vary, from a variety of causes; but the point of exit seems always to be the point of origin, even when the latter is known to be at a considerable distance.

When so many morbid conditions may, at different times, produce a single prominent result, it is not remarkable that great difference of opinion should have been expressed by those who have selected one or two conditions to the exclusion of the rest. Thus, the discovery of an atrophied state of some of the muscles of the larynx in some horses that had been roarers led to the conclusion that atrophy of muscle was the cause of roaring. A certain number of cases of constriction immediately below the larynx in carriage-horses established that defect as a cause of the unsoundness, while the excessive use of the bearing rein was naturally fixed upon as the active agent in the production of the mischief.

Bands of lymph thrown across the trachea, morbid growths in the submucous tissue, tumours pressing upon the larynx, obstructions in the nasal cavities, and deposits upon the surface of the bronchial membrane, have at different times found zealous advocates; and it may be said in favour of these various opinions that they are doubless all correct, any one of the morbid conditions mentioned would certainly lead to a modification of the sounds produced by the passage of air to and fro in the act of breathing.

Practically the important question is, which of the numerous causes mentioned most commonly produces roaring? Evidence on this point is still deficient, evidence, that is to say, which can be relied on; and many minute *post-mortem* examinations of unsound animals will have to be conducted before a satisfactory answer can be given. Meanwhile, in the absence of positive knowledge of the exact nature of the

usual morbid changes, we are compelled to draw inferences from the facts with which we are already acquainted. In the majority of cases roaring certainly follows an attack of an inflammatory nature affecting the mucous membrane, either in the form of catarrh or bronchitis; the irritation is often of a low character, associated with debility. Considerable exudation always takes place from the mucous membrane, and pus-corpuscules and granular cells are invariably abundant in the discharged secretion.

The mucous membrane becomes considerably thickened from the excess of blood in the vessels, or from exudation into the submucous tissue.

Such a condition of parts will account for a certain alteration in the respiratory capabilities which might be presumed to continue so long as the derangement exists. In a great number of instances the disease terminates in resolution, the tumefied membrane regains its normal character, and the excessive and morbid secretion is restored to its natural state, leaving the animal none the worse for the attack.

At intervals the disease may recur, and again and again leave the animal sound; but, seemingly by accident—it may happen at the first, or second, or third attack—the horse becomes a roarer, notwithstanding every care is taken in the treatment.

Young and plethoric horses are, for very apparent reasons, most subject to the unsoundness, but at no age are they exempt; and it is an exceedingly important fact, bearing upon judicial investigation, that a horse may be perfectly sound on a given day, and in one week from that time, without leaving the stable, may be a confirmed roarer or whistler, while the catarrhal attack which has produced the mischief may possibly have been of such a character as to excite no more than ordinary attention. It is by no means necessary that any urgent symptoms should be present. Such being the evidence before us, we are left to draw conclusions as to the probable condition of the parts recently implicated in disease. In doing so it is important to bear in mind the locality principally affected. If the animal has suffered from bronchial derangement, either inflammatory or catarrhal, it is not unreasonable to conclude that some thickening of the membrane in that region is left, to account for the roaring.

On the other hand, the previous existence of laryngitis, accompanied with glandular enlargement, renders it probable that the abnormal sounds may arise from obstruction to the entrance of the air into the glottal opening.

An irritable condition of the membrane of the glottis would

in itself suffice to diminish the area of the opening, as partial closure would take place from reflex action, which would be excited every time a quantity of air came in contact with the irritable surface; hence the obstruction would of necessity be greater when the animal was moving quickly than when at rest and breathing tranquilly. The cough which is often associated with roaring is an indication of this irritable condition of the mucous lining. One peculiar characteristic of roarers is the habit of "grunting" when suddenly alarmed, by a feint at striking, for example. This grunting, however, is not an invariable accompaniment of roaring or whistling or broken wind; it may be present with either disease, and it may exist in the absence of any detectable unsoundness of the respiratory functions. Some practitioners do not consider it of any importance in itself; but whatever ideas may be entertained in reference to its bearing upon the animal's soundness, it is certain that nothing is so fatal to the animal's pecuniary value; the habit is so readily detected, and the popular notion of its connection with roaring so decided, that, in the dealer's estimation, a horse had better be anything than a "grunter;" for they say, if he is not a roarer as well, he is certain to take the earliest opportunity of becoming one.

Treatment of roaring can hardly be discussed upon a scientific basis until the nature of the disease and its situation are determined. Counter-irritation has been successful, and might be advised on principle where the practitioner has reason to conclude that he is in a position to define the seat of the obstruction; and, taking into consideration the number of cases that follow disease of the lining membrane of the larynx and the adjacent parts, active applications to this region may be attempted with a prospect of success; but it must be admitted that all treatment, successful or not, applied to an affection whose nature is undefined, borders on the empirical.

(*To be continued.*)

THOUGHTS IN THE SICK BOX.
"INFLUENZA."

By Thomas Greaves, M.R.C.V.S., Manchester.

There is, perhaps, no disease which presents to the close observer more deeply interesting phenomena than

those developed in our patient as this malady proceeds through its various stages. The diligent inquirer cannot be an eye-witness and permit them to pass without contemplating them and endeavouring to glean from them some useful knowledge which may be turned by him to advantage in subsequent cases.

This disease has been very prevalent lately in many of the large towns and cities of England, and in some places it has been attended with great fatality. I look upon it as the duty of every professional man to contribute whatever knowledge he can for another's good; and it is to me a source of great consolation to know that the veterinary surgeon of the present day is so much more competent to combat this disease, and consequently to save the lives of many horses which would have been sacrificed in the days of our forefathers. Still we are yet far from comprehending fully the true nature of this malady; but I presume all educated men are ere this perfectly satisfied of the vital importance of fresh cool air, the use of diffusible stimulants, and vegetable and mineral tonics. I also presume that no man now-a-days bleeds or purges in this disease. Nevertheless, I am bold to believe that there are still many scientific physiological questions connected with this disease which have not received that full investigation which I think their importance demands; and since science does not shun the light or affect mystery, nor does it trade in ignorance or cupidity, I am anxious to provoke inquiry upon some of these points, which, I conceive, should be better understood by us than they are at present. I will endeavour to show what I mean by putting three questions:

1st. What is the first and real cause of the disease, and the exact *modus operandi* of its attack?

2nd. What is the clear and correct explanation of the debility shown?

3rd. What is the smallness of the pulse dependent upon?

To say that influenza is, like many other epidemics, referable to some putrescent or deleterious state of the atmosphere—that it is imbibed into the system during the process of respiration—that it produces a certain mystical effect upon the nervous system, thereby prostrating the vital powers—is to my mind a very ambiguous explanation, a very inconclusive hypothesis. The information I want is more definite, more self-evident. We see the exhaustion; but in what manner has that effect been produced? Let us not evade this question, but try to unravel it. In a few hours after the

attack we perceive a restlessness of the legs and feet, general lassitude is evinced, the eyelids are so swollen that the eyes are completely closed up, and there is constant weeping. In some bad cases there is a discharge of pus from the eyes and blindness for many days, and in others there are malignant pustules and extensive sloughings about the jaws or legs, or an inveterate discharge from the nostrils, simulating glanders. The pulse for the first or second twenty-four or forty-eight hours is from 88 to 100 in the minute, but small, almost too feeble to be distinctly taken even with the utmost care and with the greatest nicety of touch; it might be designated an almost bloodless pulse.

Generally speaking, influenza is an ephemeral disturbance, and where proper treatment is resorted to it is only occasionally fatal. I have had a goodly number of cases under my care during the last two months, and my treatment has been attended, upon the whole, with satisfactory results. In one stable of sixty-five horses, perhaps the largest and best cart-horses in the city of Manchester, thirty-five of them have been attacked. The pulse of twelve of them reached 88, and five nearly 100 beats, in the minute. Every case terminated successfully. In two other stables, one containing thirty-eight and the other forty-two horses, almost every horse was attacked. In these stables I was not quite so successful. I experienced considerable difficulty in consequence of the ventilation in these stables not having been properly carried out. Out of these two stables I had from time to time two attacked at once. Seventeen or eighteen of the worst cases were brought into my own loose boxes, their heads tied to the open door, and I paid constant attention to the keeping of the ears and skin of a natural temperature. In each of these cases there seemed to be a standstill; they ate nothing, pulse 88 to 96, and I could make no progress with them in their own stables; but no sooner had they got into my boxes than they began to improve, and in two or three days the pulse came down to 40 or 44, the appetite returned, and they went to their own stables convalescent. This result was the same in every instance and under precisely the same medicinal treatment, namely, the use of medicines calculated to disperse the tendency to congestion and to give increased vigour, such as Spt. Ether. Nitr., Tinctura Pimentæ, in a draught; or Carb. Ammon. and ginger, given in ball. But more than this, and I invite particular attention to this fact, viz., that in every case the pulse was found to have got up again 8, 12, or 18 beats in a minute, on the day after they returned to their own stable; but, having got over the crisis,

they continued to eat and improve. I look upon these instances as proof positive of the good effects of fresh air. I had in these stables coke fires constantly burning, day and night, in movable grates, and in some instances of unusually thick coats I clipped them with magical effect. I have seen only one case of a second attack. This was in an old horse, and he died. I have observed no clear and satisfactory instance of an affected animal communicating the disease to a healthy one. I made a *post-mortem* examination of the above horse, and also of other old horses that had died of influenza. In all these cases I have found effusion into the chest or pericardium, and this, to all appearance, without having been preceded by any inflammatory action. In no case have I applied mustard or blister to the sides or chest; but I have attended *post-mortem* examinations of horses that have died under the treatment of other practitioners where these have been employed, and in such cases I felt constrained to form an opinion that if pure, fresh, cool air had been supplied from the first, and counter-irritation had been wholly omitted, they would have lived to face the storm again. I have also examined horses where neither immaturity nor senility favoured the complaint, and where all the vital organs were free from disease, but in every instance I have found the heart affected. And I beg to call particular attention to this fact, namely, that one ventricle of the heart contained a black coagulum by itself, and the other ventricle contained lymph by itself; in other cases the two component parts of the blood had separated, but were coagulated, and had collected in one or both of the ventricles. Now, I am of opinion that this state may exist to a certain degree for many days prior to death; and, further, I am satisfied that it is possible for it to become wholly removed. But whilst this clot exists in the heart, be it ever so small, it will produce in exact ratio an inability in the heart to perform its natural function; it interferes more or less with the action of the tricuspid and bicuspid valves, impeding the blood in its transit—hence the debility and exhaustion of the vital powers; there must be a diminished if not suspended *vis à tergo*, and hence the small pulse. I feel convinced that every horse that dies of pure influenza dies from sinking and syncope, and I can readily conceive the nervous debility of the heart being such that it cannot acquit itself, but is struggling and struggling on, beating upon the same charge of blood over and over again, the organ being too feeble to effectually empty itself in its systolic and diastolic action, until at length it becomes tired out, and nature sinks from sheer exhaustion. In this manner

the ebbing wave of life tremulously flows back just as it is about to be engulphed in the vortex of death. There may be some persons who will dispute my conclusions. I want some one to do so, and thus to enable me fully to comprehend the nature of this "clot of blood in the heart." It may be said it is a natural sequence, but in this they would be in error. I have examined numbers of hearts, and have ascertained that it is nearly always found in cases of sudden death. This day I have spent two hours at the knacker's yard, and have examined the hearts of eight horses that had died, I was told, of influenza. The appearance of this coagulum differed in the different hearts, but in all it was there. I am aware, when blood coagulates slowly and settles of itself, whether it be in a vessel or in a natural cavity, its constituents separate in accordance with the laws of gravitation and the loss of cohesive affinity; and in such cases the lymph is uppermost, has the appearance and consistency of jelly, and is of a straw colour. But the appearance of the blood in these ventricles showed that it had been agitated in the cavity for some considerable time, and that the valves and cords of the valves had acted like an egg-whisk, so that the fibrine of the blood had become attached in considerable quantities to the cords and valves, assuming the character and appearance of fibrous matter, no doubt admitting of an escape back of some considerable quantity of blood at each stroke. Of this I am certain, that the blood can separate in the body during life. I had an instance of it last summer in a case of pneumonia aggravated by some hæmoptysis. After death one lobe of the lungs was found to be tumefied and twice the size and three times the weight of its fellow; there were also eight or ten ropes of coagulated blood, which had percolated into the air-passages or air-tubes, eight or ten inches long each; some of them were pure straw-coloured lymph, and the others pure black particles: they had acted like unto so many sticks or foreign bodies thrust into the lungs—hence the tumefaction. The other lobe was free from disease.

Whether this condition of the heart which I have now called attention to is a cause of that state called influenza, or is simply a result of functional derangement or some peculiar condition of the blood itself, I am desirous to see cleared up; since, if it be a cause, how satisfactory it would be to know assuredly that nature can remove such obstructions in so vital an organ.

OBSERVATIONS ON "SOUNDNESS."

By R. H. Dyer, M.R.C.V.S., Torquay.

(*Continued from* p. 12.)

What is navicular disease? These *four* words which constitute the question admit of many parts or divisions before a satisfactory answer will have been made. It will be necessary, before replying *directly* to the question, to make a cursory examination of the structures entering into the composition of the joint. It has before been remarked that three bones are contained within the hoof, viz., os pedis, os navicularæ, and the os coronæ. These several bones are connected together by means of cartilage, ligament, tendon, synovial membrane, fibro-cartilage, elastic tissue, terminal portions of tendons, arteries, veins, nerves, absorbents, and horny fibre. Having in a former number glanced hastily at the construction of the foot, it may be considered by some as supererogatory that I should again revert to it. Considering the importance of the subject, and the probability that no person will feel disposed to turn back to the number alluded to, I shall not hesitate recapitulating that portion of the anatomy of the parts as may be deemed necessary in order to deal with the subject in a satisfactory way.

The navicular bone has been described as like a weaver's shuttle. It is an irregular bone, divided into borders and extremities. It enters into the composition of the coffin-joint, as well as that joint bearing its name. It is considered as a sesamoid bone; it has an upper and an under surface; it is flattened from above downwards, broad in the middle portion, pointed at each extremity, and elongated from side to side. The upper surface is articular, and is formed of two depressions separated by an eminence; this surface corresponds to the lower one of the os coronæ. The inferior surface (as well as the superior) is covered by cartilage, and is separated somewhat similarly to the upper surface. The under surface, and the perforans tendon are so constructed that, together, they form a pulley, which is lubricated with synovia. The front margin articulates with the pedis, and the posterior one affords attachment to ligaments. The coronal bone is almost square; the inferior surface of this bone articulates with the upper part of the os pedis; it also articulates with the navicular bone. The navicular bone

forms three joints—one with the flexor tendon, a second with the os pedis, and a third with the os coronæ. The os pedis is peculiar for its foramina, &c. It is a short bone, irregular posteriorly, divided into three surfaces, three borders, and two extremities; it is very hollow, and light in weight; it has two articulations, one with the coronal bone and another with the navicular bone. Its foramina admit of passage for a number of arteries and veins, together with nerves and absorbents; being arched, it gives form to the foot, and, at the same time affords strength. One peculiarity in the venous system connected with this bone is, that these vessels contain no valves to offer impediment to the circulation. When we reflect upon what a horse has to endure in progression, we cannot but think this a beautiful provision of nature. The flexor pedis perforans has its peculiarity. It arises fleshy in conjunction with the perforatus; they separate as they get near the carpus; the perforans passes under the posterior annular ligament, where it resembles cartilage and is enclosed, together with the tendo perforatus, in a complete synovial bag, in which it is confined by cellular membrane. Below the carpal joint these tendons assume different forms, the perforans being cylindrical, while that of the perforatus is flat. In their passage down the leg they are invested in cellular sheaths, which are connected, and also to the suspensory ligament and metacarpal bones. At the fetlock-joint the perforans tendon becomes flat; lower down, however, it assumes its original shape, and runs within a tendon formed by the perforatus; at the os coronæ it is destitute of any covering save that of cellular tissue, and is continued under the navicular bone, forming, with it, a synovial sac, at which part it has very much the character of *cartilage;* it then passes forwards and becomes expanded, and is attached to the posterior concavity of the os pedis. Its action is to flex or bend the foot, as well as to assist in the flexion of the pastern-joint.

It will be observed that this tendon has several peculiarities, some of which may have a certain amount of influence in the various movements of the limb. It would occupy too much space were I to endeavour to advance those arguments which one is led to contemplate when looking at, and reflecting upon, the many changes that take place from the origin to the termination of this muscle. Doubtless enough has been written to impress the reader with some of the peculiarities of the different structures entering into the formation of the navicular joint.

The question propounded was—What is navicular disease?

In my note-book, dated May 27th, 1843, I find written, "Inflammation of the synovial membrane of the joint will cause secretion to cease, which is sometimes succeeded by ulceration of the bone, and sometimes of the perforans tendon." It has been affirmed that when the navicular joint is thrown out of use (that is to say, when it is at *rest*, consequent upon contraction) secretion of synovia is partly arrested, and inflammation of the membrane is the consequence. This was the reason assigned by Coleman, and partly agreed to by Turner. When a foot is said to be contracted, and lameness present, it used to be supposed that contraction, and contraction *alone*, was the complaint under which the animal laboured. There are several *kinds* of contraction; that is to say, all feet are *not* contracted in a similar manner; for instance, there may be contraction in the inner quarter and not in the outer; there may be contraction at the heels especially, and which does not extend more than an inch or so towards the toe; again, there is contraction of the fibres of the wall, midway between the coronet and the inferior part of the wall. My belief is that there are but *few* cases of what may be termed *contraction*, so as to cause lameness. Contraction is a *consequence*, not a *cause*. If there was not *pain*, to some extent, so as to cause the foot to be rested, there would be *no* contraction; or in other language, if the internal structures of the foot were *free* from disease there would be no necessity for resting the foot. It is not a natural habit for a horse to rest his fore foot, nor do I believe it is a natural habit to rest the hind limbs. Much has been written about contraction, and but little understood respecting it. Navicular disease and contraction are pretty identical my experience has led me to believe. When we see a horse with two or four contracted hoofs, we seldom find that animal the subject of lameness, because the contraction of the horny structures appears to be normal and not abnormal growth. It has been said that such feet as these are *not* to be considered as contracted ones; the only kinds of contraction *noticeable* are those in which the feet have been *known* to be larger than they are when presented for examination. This seems very good advice, but, I would ask, how often do we find horses sent for examination that we are *supposed* or *likely* to know anything about? Horses presented to us for inspection as to soundness we never may have seen before. It is therefore useless to dwell upon such a contingency as this. Many horses with what appear to be contracted hoofs are as sound and good workers as any in the universe. Contraction, then, must not, cannot, be looked upon as a *symptom* to be relied upon as denoting *contraction*

alone; it must be considered as a symptom of disease of some important structures deeply seated in the foot, and those structures are doubtless to be found in the navicular joint. A few years ago the word contraction was in everybody's mouth; in the present age it is *navicular*. Every age has its fashions and its novelties, and it is the same in medicine as in other matters. When I commenced my studies the *fleam* or lancet was never absent from our persons—so it was in the human profession—every horse showing pain was sure to be bled, and every person similarly affected must be bled also. How is it now? The operation of phlebotomy is seldom had recourse to in the practice of either the veterinary or the human surgeon. For my part, I have not bled a horse for the past fourteen years, except under *peculiar* circumstances. These facts will, perhaps, account, in some measure, for such changes as all of us must have witnessed. It has been asserted that navicular disease is not known in the hind feet, nor is it; but we find articular lameness in the tarsal bones, a disease very much akin to navicularthritis. The question has often been asked, how it is the navicular joint behind is not liable to disease as is that in the front feet? A solution of the question has been offered in these words by Mr. Percivall:—"It will not appear strange that the navicular joints of the hind limbs should exhibit no such disease as so frequently invades the same joints in the fore limbs, when we come to consider the difference of function in progression, performed by the fore and hind extremities. While the former are little more than props of support, and for that reason have their bones ranged in the form of upright columns, the latter have their shafts obliquely placed, thereby constituting, one with the other, so many obtuse angles, to the end that, by forming powerful levers, and affording every advantage for action to the muscles attached to them, they may be fitted for the grand purpose of propulsion of the body onward. Any injury sustained in action by the upright column—the fore limb—will originate in jar or concussion, aggravated by the moving weight superimposed upon it; whereas any injury that may accrue to the hind limb will arise from the stress imposed upon the several levers and angles at the moment progression is being effectuated; the principal axis of which movement being the hock joint, that, as might be expected, will be the part to feel any inordinate pressure or force of action. The navicular joint fails in the fore limb, then, simply from the circumstance of being the nethermost joint of the column—the last to receive the shock from above, the first from below; and the hock in the hind limb is the joint expected to fail because it is not

only situated so as to receive the brunt of the shock, which in the fore limb descends down the column, but has likewise to sustain the weight of the body and its burthen while in state of motion. Joints appear to sustain more harm from shock or concussion, caused either by imposing great weight upon them while in action or by high or sudden descent of movement, than from hard or continued work; and we shall universally find that those of the fore or hind extremity suffer most, in particular the navicular or hock-joints, according as they have respectively been the most called into action."

It will be readily understood, from the above observations by Mr. Percivall, that, physiologically speaking, the hock and not the navicular joint behind, should suffer disease. We may carry the illustration a little further, with the endeavour to explain the reason *why* the navicular joints in the hind feet are not subject to the same kind of disease as those of the front feet are. When we look at the fore extremity—viewing it during progression—we shall find that the navicular joint must of necessity sustain great violence under certain circumstances, and, at all times, more or less under *any* circumstances. The movements of the fore limbs well exemplify this. With regard to the hind feet movements, we shall observe these feet during progression are exercised in a different manner to those of the fore extremity. As a general rule, the *toe* and *not* the posterior parts of the feet are put upon the stretch during the many movements. The toes of the *front* feet are frequently brought into violent contact with the ground in heavy draught going up hill, which will save the navicular joint, and so are the hind feet also; but, under ordinary circumstances, the posterior portions of the front feet come to the ground first. It is not so with the hind feet, and this will, I think, be one *other* reason *why* the navicular joints in the hind feet are not susceptible of the disease in question. The perforans tendon in front is *always* receiving concussion and tension, whether the animal is in the stable or at work out of doors. The tendon running under the navicular bone in the hind foot is differently situated; from the angle formed at the tarsal joint the navicular joint below is relieved of much its fellow has to do in the fore extremity.

Where weight is superimposed and concussion received, there we find disease exists, in connection with *synovial* joints. Many joints of this class are to be found about both fore and hind limbs which are not very liable to disease; take, for example, the shoulder, elbow, carpal, fetlock, and coffin-joints in the fore extremity; and the acetabulum, patella,

fetlock, and lowermost joints in the hind extremity; these are seldom found with disease in their structures, most of which may be explained from the fact of these joints being not merely differently constructed as to their angles, but from their having so much *cushion-like* or elastic tissue at or near them. The *frog* in the fore feet doubtless plays a most important part in the economy of the foot. This little body has received much attention, from time to time, by writers on pathology, and there appears to be divers opinions amongst anatomists as to the functions it has to perform. I have heard some say the frog should be hard; others assert it should be soft and yielding, and so on. One person will advise the sole, or lowermost part of the foot, ought at all times be kept soft; others, on the contrary, recommend that it be kept hard. How are these contrary opinions to be reconciled? The intention of the frog is, I have no doubt, to afford *protection* to the delicate structures above it, and to give form and shape to other and harder parts of the foot, and at the same time to offer *buffer-like* properties to those parts; indeed, I should view this body in the same light as I would the buffer of a steam-engine. If the frog is hard, small, and *in*elastic, it cannot act as a *cushion* to any parts in immediate contact with it. On the other hand, if it be found large and elastic, it *must* act as a protection to those parts of the foot nature seems to have ordained it to protect, especially in acting as a stay or stop in violent movements.

(*To be continued.*)

THE "ONE DESIDERATUM"—HOW IT MAY BE ATTAINED.

A Letter to the Editors from G. ARMATAGE, V.S., *Hon. Sec. to the North of England Veterinary Medical Association.*

"OH! wad some power the giftie gie us
To see ourselves as others see us;
It wad fra mony a blunder free us,
An foolish notions."—BURNS.

GENTLEMEN,—Your well-timed observations on the above subject, in the leaders of the *Veterinarian* for February and December last, are encouraging, and have actuated me to commit a few stray thoughts to paper. But whether they are worthy of your pages is a matter for your better judgment.

A slight glance at the remedies already propounded for the amelioration of the condition of the whole body of veterinarians, will convince the observer that the motive power which shall be brought to bear is the scythe of the law, as it were, to mow down the Scotch thistles which stand bristling up with presumptuous dignity amid the more elegant flowrets of our domain.

Another result of offended dignity is, that Mr. A declares he will not accept another invitation from his bosom friend, Mr. B, to visit him on "state occasions," because he cannot see any sense among Scotch thistles, or tolerate the waving of their coarse heads in the same maze of blooming maturity as the more favoured plants of his *parterre*. Mr. B, he admits, has given the best of entertainments; they, in fact, always furnished matter for grateful recollection and useful application; he has had no personal encounter with the formidable-looking, coarse waving guests, and he cannot even say they have ever assumed the aggressive. "They are all very well in their way, I dare say; *but*, you know, they are only Scotch thistles, and a thistle is a thistle all the world over. That's my opinion, and, you know, one should be careful with whom we mix now-a-days; so much depends upon appearances."

Mr. B says—"A man's a man, for a' that."

Mr. A denies it, and henceforth there is a frigid coldness set up; and he leaves his *ci-devant* friend, despite his general genuine hospitality, inwardly feeling what a simpleton he is, and relieves his mind by a rush into print.

We need not go far to prove the incorrectness of the policy of "convincing a man against his will." If Russia, or Austria, and other nations, choose to go to war, the conscript principle is set on foot; but how many seek to resist one infamous stain on the escutcheon?

In the less civilised ages of our own dear England the press-gang was the motive power and persuader of the people; and I would ask, how much has she suffered by the abolition of such a principle of horrid tyranny? Have our wars been the less numerous or murderous? have our victories been the less since that time? and have our armies been one wit the less strong under any circumstances?

The influences of a spirit of judicious liberalism pervades the whole of our national condition, to which we owe health, wealth, and everything we possess.

A parliamentary committee ridiculed the idea of a railway train being propelled at the rate of twelve miles an hour, and denounced it as a total impossibility for the same to maintained its equilibrium if it should meet an "*owld coo*" in its

progress. But besides doing many other stupid and equally absurd things it has found—and continued to the present time to become more enlightened on all matters—that the spirit of liberal encouragement is by far the best after all—

"A little honey catches more flies than vinegar."

This is how I translate your word *forbearance;* and in my opinion, if the honey is but gently applied, the result will be that the whole swarm will *gradually*—not *en masse*—see probably that there has been *an error of judgment*, and the "*one desideratum*" will be accomplished; the hive will be peopled with industrious occupants, and the drones fairly beaten back.

For my own part, I really think there are more reasons than the liberal constitution of our veterinary medical association to be enumerated why some of our friends decline to come amongst us. One individual, when pressed for a reason, thought the certificate question as a stale excuse, and urged that "*he had not time.*" Another said "he had done reading and studying;" all that he took leave of when he consummated his affection for *alma mater* by bidding her farewell.

The truth really appears to be that there are individuals, even of the chosen few, who do not dare to venture an opinion before honest criticism. The veterinary medical association, to all intents and purposes, is a perpetual examining board, by which the efficiency of the members will be promoted, tried, and kept up. It is the turbulent sea on which the frail bark of prejudice and ignorance will not live. Debate will find and drive these before it, and arouse thoughts of sterling character, more fit embellishments for the noble edifice of mankind.

Veterinary medical associations should be liberal in their policy. Certificated men *should* be admitted; and if the force of increased wisdom be carefully blended with a love of our neighbour and noble examples, the pattern will be of too grand a nature not to be emulated.

Aristotle said a statue lies hid in a block of marble; and the art of statuary only clears away the superfluous matter, and removes the rubbish. The figure is in the stone, the sculptor only finds it. The philosopher, the saint, or the hero, the wise, the good or great man, very often lie hid in the plebeian, which a proper education might have disinterred and brought to light. Now, if we have found no great men, no saints or heroes, the only reasonable conclusion one can arrive at is that we have no one about us that knows the art of statuary. It is time, therefore, the art was commenced, and the rubbish removed. We therefore

cry out, who offers? Who will take up the rough tools, and ply them with a manly vigour and determination? Who is there not afraid to touch the falling chips, and able to see the form that lies hid beneath? Wanted; sympathy! a fellow-feeling, and the work is accomplished.

Let me inquire before I conclude,—cannot there be even more than this done to collect the stray ones around the parent tree? Surely the veterinary profession has been a child of sorrow born! a neglected mortal! What are the aspects of other professions?—scholarships are founded by which men with great intellect and little purses are encouraged to cultivate their mental powers. Schools are endowed by persons charitably inclined, and genius induced to come forth. Similar aid is given to teachers—we hear of "chairs" in the various schools, and "annual lectures" being delivered under the name of some kind benefactor and lover of science who had a respect for those to follow him.

What greater examples do we want than these? Yea, verily, "the harvest truly is plenteous, but the labourers are few."

A SUGGESTION, AS TO THE FEEDING OF MILCH COWS WITH A VIEW TO AN IMPROVEMENT OF THE CONSTITUENTS OF THE MILK.

By "Humanitas."

There is probably not a more important question, in a sanitary point of view, than that which relates to the feeding and keeping of animals designed for the food of man.

I refer to the injurious effects upon the health of the people, caused by the consumption of the flesh of unhealthy and diseased cattle. Doubtless this subject will obtain, in the right quarters, the consideration which its gravity demands; and as a proper system of feeding is one of the most important of hygienic conditions, it is to be hoped that the question of "food" will not be overlooked in any official inquiry that may take place upon the subject.

It is my intention to confine myself to the proposition indicated by the heading of this letter, viz., the "milk of cows." It is well known to those who are acquainted with the habits of the labouring population and the very poor,

that milk is an extremely rare article of consumption at their tables. This strange fact can be accounted for neither by the scarcity of the article, nor by the poverty of the people who avoid it, as those who stint themselves in this precious liquid mostly expend large sums in superfluous beverages. What, then, is the reason that milk is so scarce in the poor man's home? It might be supposed to arise from a prejudice, were it not, alas! a too well-founded belief, viz., that the milk which is obtained from the sellers is of an inferior, if not of a positively injurious description. The consequence of such a conviction is, that the commodity is purchased by the class of people I am referring to, in very small quantities, indeed, quite inappreciable as an article of diet, when considered, which it should be, as a necessary of life. The results of this omission are very disastrous to the infant poor—mostly deserted during the day by the mothers, who go out to work—the little ones being fed upon bread-pap and quieted with opium, until atrophy, inanition, and death, put an end to their wants and their sufferings.

The children of the well-to-do classes are not much better off. It is the fashion to depend exclusively upon cow's milk in the case of hand-reared infants, and as it is my intention to show that cow's milk generally is defective, and even under the most favorable conditions does not contain the elements necessary for nutrition in the special cases indicated, so it will readily be seen that even when abundance of milk can be obtained, quantity cannot replace quality. This brings me at once to the point intimated at the beginning, viz., *the desirableness of trying some new system of feeding the milch cow, with the intention of raising the qualities of the milk to a definite standard.*

In the course of these introductory statements, I have been compelled to traverse ground, somewhat, I fear, beyond the limits which the special character of your journal prescribes; but I trust I may be so far excused on account of the object in view. The following explanatory remarks will address themselves more immediately to your readers.

Not to occupy your space unnecessarily, I will pass over the important subject of the feeding and management of the cow generally; the evils of town sheds, both to the animals and to the inhabitants in the immediate localities; the proper food and exercise of the beasts; the size of the sheds and mode of ventilation, to ensure health and cleanliness. These matters I leave in the hands of those who are better able than I am to discuss them; and I proceed to speak upon the chemical composition of cows' milk as compared

with human milk, supposing that we have a specimen of normal milk from a healthy animal, fed in the ordinary way. I need not quote figures, as they are better avoided when the subject can be understood without their aid. Most persons are acquainted with the relative proportions of the component parts of human and animal milks; and it is only necessary to my purpose to point out those elements which in cows' milk are deficient in amount, and the kind of food which I propose to be employed, in order to bring the milk of the animal up to the standard of that of the human mother. In cows' milk the sugar is deficient, and that will in some measure account for the absence of the calorifacient element; the water is also less than in human milk; the butter and casein are more, and the salts also are in excess. Cows' milk is not unfrequently acid, especially when the animal is stall-fed, while human milk is decidedly alkaline. Bearing all these differences in mind, it appears to me that every condition indicated might be fulfilled, and that we should obtain a very good balance in the relative proportion of these essential elements in the milk, if we supplied the cow with the kinds of food containing the sugar, the alkali, and carbon. Thus by supplementing artificially those constituents—the milk being naturally rich in butter and casein—we may safely add the proportion of water without unduly impoverishing the whole.

There may be among your readers some, doubtless many, sufficiently philanthropic and disinterested, at all events possessing a love of science and a spirit of inquiry, ardent enough to induce them to conduct such an experiment; and should it succeed, their reward would be certain in the consciousness of having aided the accomplishment of a great good; nor would the pecuniary profit be wanting to those who might undertake the experiment with that view. It is a common thing for the milk of one cow to be bargained for to supply a sick child or an invalid adult, and an increase in the rate of charge is of course demanded and conceded. So with the "nursing milk," as it might be termed; it would find its way into many a nursery at sixpence or eightpence per quart. Nor would the benefits end here; the idea once having taken hold, the experiment no doubt would be continued and carried out. It might be put in force in connection with *Foundling Hospitals;* the mortality of which, according to death-tables, is excessive, indeed frightful; and so from a small beginning—great honour to the person who would take the initiative—a wide-spread benefit might accrue. I believe it is not Utopian to predict this much; for as the

knowledge of the subject spreads, so would the good extend by cattle-feeders, dairy-owners, small farmers, gentlemen farmers, and others, finding that the new system of feeding promotes the health of the animal, and produces an increased yield of milk. The losses also from disease and death of cattle being less, the profits would be actually more; thus milk might very well come down in price, and so be available to the very poor. Milk being good, plentiful and cheap, instead of bad scarce and dear, the whole infant population of the kingdom may luxuriate in the change, and the saving of much infant life may happily be the result.

I have not particularised the precise kind of food which it may be desirable to substitute for, or employ in addition to, that which is now usually given as fodder to milch cows. As an *amateur* I cannot be expected to enter into details, having only an instinctive appreciation of the subject to guide me, and a common-sense view of the matter generally. If I did suggest anything, it would be that beetroot or carrots might supply the saccharine properties, ground corn the calorifacient and the alkali; these, varied according to circumstances, with bran-mashes, grains, or hay, would seem to fulfil all the conditions indicated. It appears rational to suppose that green food, turnips, &c., should be suspended while the experiment is continued; and as the kind of food proposed would come under the description of high-feeding; air and exercise, besides all other conditions necessary to health should be freely promoted; for it may be presumed that animals undergoing special treatment, can have the advantage of these exceptionally favourable circumstances.

[Feeling, as we do, that the subject of dietetics is one of the highest importance to mankind, and that its study is productive of the most interesting and practically valuable results, and sympathising, also, with the laudable desire evinced by "Humanitas," we have great pleasure in inserting the foregoing communication.

If the theory propounded by "Humanitas" be correct, that an increase in the quantity of saccharine matter in the food given to cows will be followed by an augmentation of sugar in their milk, we should anticipate that the milk of cows fed upon food comparatively rich in starch and gum would contain a larger amount of sugar than that of cows kept on green fodder, turnips, and other allied alimentary articles, and that, in order to occasion the increase in question, *actual sugar*, as an auxiliary aliment, would not be necessary. It must be remembered that amylaceous or mucilaginous matters, or both, constantly form a large proportion of the

vegetable substances upon which the herbivora are fed; and that during the process of digestion they are transformed, partly at all events, into sugar, the very body which "Humanitas" suggests as an addition to the food of cows, in order that their milk may approximate more closely to the milk of the human mother. The suggestion, however, is a very praiseworthy one; and experiments to determine the point ought to be instituted.]

DISEASED CATTLE.

A Communication from J. Horsburgh, M.R.C.V.S., *Dalkeith.*

Sir,—I send you a report of a decision given in the Court of Session on pleuro-pneumonia, which I think you will agree with me is perfectly correct. If all our Scotch cases had resulted in like manner that disease would long ago have been extirpated. But unfortunately opinions on this disease are so contrary to each other that the public looks on them with disgust; and instead of taking the proper means to prevent the disease they leave it to chance, sell their dead and dying cattle, and the people become the sufferers.

A few years ago I was called upon by one of the firm of Webster and Rennie, V. S., to give my opinion on the evidence of witnesses in a case of diseased cattle before the Lord President of the Court of Session and a jury. It occupied three days. A farmer in Banffshire had ordered a cattle agent in Yorkshire to send him twelve short-horned cows for breeding. They were to be sent to Aberdeen per rail, and there taken from the agent, or his servants, by the farmer. The account of the case as given was—That the cows arrived at Aberdeen; but instead of the farmer getting intimation of it, they were given into the hands of a common drover, and the cattle agent, or his servants, returned home. The drover arrived at the farm about one o'clock on a Sunday morning; men were ordered out of their beds to put the cows in a park, and in the morning many of the cows were found diseased. A veterinary surgeon was sent for, who gave his opinion that they had been diseased before they left Newcastle, where they were put into the train that brought them to Aberdeen. At the time the case came on for trial all the cows but one were stated to be dead, a number of the farmer's other stock, and some of his neighbour's also; and eighteen veterinary surgeons were examined on that trial. Mr. Penny (now Lord Ordinary in the report

sent you) was advocate for the farmer. In his address to the jury he said:—"They had seen eighteen veterinary surgeons examined before them. They would agree with him that they were of the first-rate talent that Britain could produce, and every one of them was of the same opinion, viz., that the cows were diseased before they left Newcastle. One man, however, must be excepted."

A clearer case of any man getting damages for the great loss he had sustained could scarcely have been thought of. But the Lord President in summing up directed the attention of the jury to the evidence of this new class of persons calling themselves *cattle agents* and *cattle salesmen,* that our farmers have now placed themselves in the hands of. They had given their opinion that they were not responsible. If they took an order they purchased cattle, but they were not responsible for these cattle being sound or diseased. The jury gave in to *that* opinion. The farmer lost his case, and, it was said, £7000. The evidence of the veterinary surgeons was of no use whatever to him.

If this case did not put into the power of these cattle agents to purchase and sell diseased cattle I don't see what would; and I am quite aware it is acted on to an immense extent, so that it is likely the disease will continue to exist to the great loss of parties, and also to the public generally, by the excessive price now given for butcher's meat. In the Cattle Disease Bills lately before Parliament how did it come to pass that they (the cattle agents) were so strenuous in their opposition? If they had passed (as they must soon do) their nefarious trade would be at an end. They gave evidence "that ignorant Highland porters at railway stations might stop the transit of their cattle, and fairs could not be held; and the whole country would be ruined, and beef would be 1*s.* 6*d.* a pound. They found fault with railway trucks not being cleaned, and would have no objections that railway managers should be fined for foul and infectious carriages for their cattle. But *they* were not to be interfered with, though they were the parties entirely to blame by putting diseased cattle in these carriages, many of them knowingly doing so, and receiving a high fee for the sale of such in the public markets, and also in their own places of sale.

Such is the practice here. Every animal of cattle kind that dies or is killed under disease is sold to be eaten. The magistrates of Edinburgh lately advertised for qualified inspectors of meat, to whom £200, £150, and £80 were to be given. What is the result? A veterinary surgeon, if qualified,

ought to have been the man to detect the disease in public markets, and prohibit the sale of such; instead of which an old farmer gets the £200, and a veterinary surgeon only a journeyman mason's wages; whose particular business, it is said, is to see the slaughter-houses cleansed and the tallow weighed. A *market committee* were the parties that selected the competent candidates. That committee, if not salesmen themselves, were certainly in their power, and now we send all the dead and dying to Edinburgh the same as ever, while fines of £10 are extorted from butchers for having bull beef, stinking rabbits or grouse. But no cattle agent has ever been fined for selling living animals in the public markets, selling them and destroying the stocks of farmers, or trucking diseased cattle they dare not sell at their own homes to distant markets.

I am, yours &c.

To the Editors of 'The Veterinarian.'

JOHN BROWN, farmer at Boghall, *against* JOHN MUIR, farmer, Lochfergus.

This case, which is of considerable importance to farmers and others dealing in cattle, has just been decided in the Court of Session. The action was brought to reduce and set aside a decree arbitral pronounced in a submission entered into between the parties with reference to the damage sustained by the defender, from the introduction among his stock of a bull which he had purchased from the pursuer, and which at the time was affected with pleuro-pneumonia, although it was guaranteed to be in sound condition when it was delivered. The Lord Ordinary, after hearing counsel, pronounced the following interlocutor and note, which fully details the whole facts of the case:—

Edinburgh, 7th March, 1862.—The Lord Ordinary having heard parties' procurators, and made avizandum, and considered the closed record, process, and productions and minute for the parties, No. 40 of process, refuses the motion for a diligence made in said minute by the pursuer—finds that sufficient grounds have not been shown by the pursuer for reducing the decree-arbitral libelled—assoilzies the defender from the conclusions of the libel and decerns—Finds the pursuer liable to the defender in the expenses of process; allows an account thereof to be lodged, and remits to the auditor to tax the same and to report.

W. PENNY.

NOTE.—The pursuer sold to the defender an Ayrshire bull in February, 1859. The bull was delivered and placed amongst the defender's stock. The defender afterwards complained that the bull was at the time affected with pleuro-pneumonia, and had affected his stock, and he claimed from the pursuer relief from the price, and damages. With reference to this claim, the parties on the 29th November, 1859, entered into a deed of submission, by which they referred to two arbiters named, and any oversman they might appoint, "all demands, claims, disputes, questions, and differences depending and subsisting between them upon any account, occasion, or transaction whatsoever." The submission was ultimately devolved on Mr. Thomas

Lawrie as oversman, who issued a decree-arbitral on 20th April, 1861. By this decree, after finding the facts of the sale, and of the disease being then on the animal, and his death in consequence, the oversman proceeds thus—"Therefore, I find the said John Brown not entitled to payment of the agreed-on price, £19 sterling. I find that the bull in question, when sold, was out of a diseased stock, and when delivered was labouring under the disease of pleuro-pneumonia, and in consequence communicated that disease to the claimant, John Muir's stock; and that the said John Brown is liable to reimburse the said John Muir for the loss and damage suffered by and through the introduction of such disease into the stock; and I further find that the said John Muir suffered loss and damage by and through the introduction of such disease into the stock; and I further find that the said John Muir suffered loss and damage by and through the introduction of the said disease into his said stock to the amount of £400 12s. 3d.; and I find the said John Brown liable to payment to the said John Muir of the said sum; and I further find the said John Muir entitled to payment of the sum of £20 sterling for medicine to, and medical attendance on, his said stock as claimed; and I, as oversman foresaid, decree and ordain the said John Brown to make payment of the said sum of £400 12s. 3d., and £20 sterling, amounting together to the sum of £420 12s. 3d. sterling, to the said John Muir." This decree-arbitral is now brought under reduction, on the ground that, in pronouncing it, the oversman decided on matters not coming within the category of disputes or differences existing at the date of the submission. This objection is explained to mean that, on looking into the proceedings in the submission, the oversman will be found to have taken into view damage arising after the date of the submission; as, for instance, the cure of cattle which died after that date, and consequential damage of various sorts similarly posterior in date. The Lord Ordinary is clearly of opinion that this is no sufficient ground for reducing the decree-arbitral. The thing which was referred was admittedly the damage arising from the sale of a diseased animal, comprehending the mischief done to the remainder of the defender's stock. The parties clearly intended to refer the whole damage so arising. They did not intend a succession of submissions. That a part of such damage showed itself after the date of the submission, or showed itself in a more aggravated form, as in the case of cows diseased at that date, and which died afterwards, did not remove the damage from the consideration of the arbiters. It was still a part of the damage arising from the sale of the diseased bull which was the thing referred to. In the case of a formal summons of damages, a difficulty sometimes arises from the technical conclusions limiting the demand to anterior damage. But the difficulty is removed by concluding for the damages "hitherto sustained, or which may yet be sustained, by the pursuer." It appears to the Lord Ordinary that the wide terms of the submission in the present case are equivalent to such a conclusion. Their generality must be held to be purposely adopted, to give the widest possible expression to any existing demand. As to whether the oversman erroneously estimated the damage, or has given too large a sum, no question can now be raised. Error in the judgment is no ground for reducing a decree-arbitral. As was once quaintly remarked by an eminent judge, "It is not *ultra vires* of an arbiter to go wrong." The Lord Ordinary has refused the pursuer's motion for a diligence because the documents sought to be recovered have no pertinency to the only question in issue.

DEATH OF A HORSE RESULTING FROM THE EXHIBITION OF A DRAUGHT.

By William Jackson, Veterinary Student, Sheffield.

On the 8th of January I was requested, in the absence of Mr. Cartledge, to attend a cart-horse, the property of a firm in the neighbourhood.

The horse, about a fortnight previous, had been under our care whilst suffering from an attack of inflammatory œdema, from which he had recovered.

On Mr. Cartledge's last visit, he prescribed some medicine to be given in the form of powder. The animal, however, would not take it in this form, so the man mixed one of the powders in water and gave it to him as a draught. After the first hornful the horse began to cough violently, which lasted for some time, and then subsided. Soon after this he refused all food, only drinking occasionally a little cold water.

It was on the sixth day after this occurrence, that I was requested to see him. Upon my arrival I found the horse very weak, pulse numbering about 75 per minute, visible mucous membranes slightly injected, a purulent discharge from the nostrils, respiration quicker than ordinary, and the breath most offensive.

From the history of the case and the absence of the usual symptoms present in pneumonia or pleurisy, my diagnosis was that in giving the draught (one of the constituents of the powder being croton farina) some amount of irritation had been set up in the larynx, causing the animal to cough, and during this act a portion of the mixture had entered the trachea and bronchial tubes.

I treated the case as I should one of pneumonia, not, however, with much hope of a favorable result.

Mr. Cartledge saw the horse the next day, and expressed an opinion similar to my own, that the mischief had been caused by giving of the draught—a circumstance, however, which he stated he had not met with before, and the only hope of recovery he thought was that nature might enable the animal to overcome it.

The treatment now ordered was such as to recruit the horse's strength, which seemed to be fast failing. He appeared rather better on the 10th, and drank a little gruel

and hay-tea, but on the next day he seemed much worse, and died on the 13th inst.

On making a *post-mortem* examination, we found the lining membrane of the larynx, trachea, and bronchial tubes much inflamed; numerous small abscesses existed in the structure of the left lung, and other parts of it were quite gangrenous. The right lung appeared tolerably healthy, as also did the other viscera.

ON THE REMARKS OF "HUMANITAS."

By R. Bolton, Veterinary Practitioner, Gibraltar.

I have perused with pleasure the concise remarks at page 30 of the *Veterinarian* for the month of January, by "Humanitas," and, without entering into details of each sentence thereof, I must say that I concur with the same *throughout*." "Humanitas" speaks "multum in parvo." With a view, therefore, of strengthening, if possible, his just observations, I beg to call the attention of those of your numerous readers who keep *carriage-horses*, to the fixed bridle or bearing-reins used; which I will make my present subject.

With respect to bearing-reins, I am of opinion that they can very well be discontinued, upon the conviction that they are often the cause of annoyance and a positive hindrance to those noble animals that afford to mankind so much usefulness, comfort, and pleasure.

This, as I term it, unnecessary rein, inflicts punishment upon the carriage-horse, only to be estimated by those who, abolishing its use, will notice the ease and comfort bestowed on the animal, more particularly in ascending a hill. The hindrance to which I have in the preceding paragraph alluded, is with regard to the full exercise of the natural strength of the horse. These reins are often a source of continual torment to the patient animal, particularly so on a hot summer's day. At times also they are the cause of a fall, by keeping the horses' heads in a stiff and elevated position; thus preventing them from properly seeing the road along which they travel, and likewise impeding, to a certain extent, their freedom and agility.

For instance, it may in many instances have been noticed, when a carriage is stopped, that a carriage-horse tosses his head about, drawing it round to his sides, and by these and

other signs, clearly indicating his distress and uneasiness. Without bearing-reins they would, as a matter of course, sooner recover their breath after having been driven hard, and much better enjoy relaxation at every stoppage.

The correctness or incorrectness of my judgment relating to this may be readily ascertained upon one, or say two, trials.

The uniform advocacy of the remarks of "Humanitas," tending as they do to diminish suffering, induces me to hope that you will not object to give insertion to this humble communication, which I will draw to a close, firmly believing that a great deal with respect to these reins rests in the breaking-in of the horse in the first place, and I would recommend, that owners of carriage-horses, not desirous of thoroughly dispensing with these reins, should, at least out of a due regard for the comfort of their valuable beasts, immediately unrein them on arriving at every halting station. I consider the appellation of your correspondent to be very *apropos*, for his ideas are indeed humane; and I trust that some of your correspondents will ere long make a fair trial of what I have advocated, and report impartially thereon.

LETTER FROM MR. COOPER, IN REPLY TO MR. ERNES.

MARKET WEIGHTON, *Feb.* 18*th*, 1865.

MESSRS. EDITORS,—I am induced to write you in reply to Mr. Ernes' remarks on my communication relative to some cases called by me "severe attacks of influenza," and published in your January number.

In my opinion the symptoms and appearances of the disease in question were not characteristic of "*anthrax*." There were no circumscribed swellings or boils in any of the cases; indeed, in three of them, there was no swelling of any kind. I am therefore bound to think that Mr. Ernes is as much mistaken in calling the disease *anthrax* as I was in calling it *influenza*.

I am not at all inclined to be controversial, my only object being to arrive at the true nature of the disease.

Trusting you will give an early insertion to this communication,

I am, &c.

Facts and Observations.

Unwholesome Food in London Markets.—Dr. Letheby reports that the inspecting officers of the London markets and slaughter-houses have during the past year condemned 229,187 lbs., or upwards of 102 tons of meat as unfit for human food; and of that quantity 96,779 lbs. were diseased, and 43,490 lbs. were from animals that had died from natural causes. The quantity of meat condemned during the last year was greatly in excess of that of former years, the average quantity being about 154,900 lbs. yearly, and the excess was chiefly in the proportion of meat from animals that had died from disease; the amount of that kind of meat being nearly doubled during the year, which indicated the necessity for the severest treatment of those who had consigned such meat to the city markets. Besides this there had been condemned and destroyed at Billingsgate, by the orders of the Fishmonger's Company, upwards of 774,000 fish, chiefly whiting, plaice, herrings, haddocks, gurnets, dabs, and dace; also, 1264 lbs. of eels, 9572 gallons of shrimps, and 120 bushels of whelks and winkles.

Hippophagy.—The "agricultural correspondent" of the *Indépendance Belge* gives a very full and interesting account of the extraordinary banquet of horseflesh which recently took place in Paris. The courses were numerous, and in nearly all of them this strange delicacy was served up in various forms. After the dinner several toasts were proposed in characteristic speeches. M. de Quatrefarges, the president, opened the proceedings by calling on the company to drink to the memory of the late M. Geoffrey St. Hilaire, the apostle of hippophagy, and the worthy son of that eccentric *savant* replied. M. Lecoq then proposed the health of the veterinary medical profession. M. Decroix, in responding, declared that all the horses whose flesh had been eaten at this dinner were old and miserably thin beasts, from fourteen to eighteen years of age, and that none of them had cost more than forty francs, and one as little as eighteen francs. Immense applause followed this announcement, for it was considered that if such aged horses produced such good meat what might not be expected from five- or six-year-olds! M. Homon, of the *Pays*, put in the claims of the ass and the mule to the honours of the *cuisine*. Doctor Blatin eulogised

hippophagy from a medical and utilitarian point of view. M. Barral, who proposed "Public Education," recommended it as the means of dispelling prejudice and repugnance from the notion of horse-eating—a pleasant prospect for the ingenuous and hungry youth of France! M. Georges Bell, of the *Presse*, reminded the company that the use of horseflesh as food was no novelty, as it had often sustained the armies of France. All who partook of this singular meal are said to have been perfectly satisfied; many of them had never tasted horseflesh before, and none showed any disgust in eating the food set before them. Strange if the hippophagists should be right after all! In the meanwhile, however, Englishmen will probably reserve their judgment, and, at any rate, not go beyond "*charqui*."

A DANGEROUS PARASITE.—Among the successful candidates for the prizes of the Academy of Sciences we mentioned Dr. Zenker, of Dresden, for his important researches on the *Trichina spiralis*. This microscopic worm, which lives coiled up in a sort of cyst or pocket, was observed about 1835 by Mr. Richard Owen, in the flesh of certain animals. In 1850 Dr. Herbst, of Gottingen, found by experiment that the trichina was transmissible from one animal to another by ingestion, and Drs. Virchow and Leuckart confirmed the fact. On the 12th of January, 1860, a young girl was admitted into the hospital of Dresden on the supposition that she was labouring under typhus fever, but there were some symptoms wanting to confirm this opinion. The girl died on the 27th and Dr. Zenker, on dissecting her body, found to his astonishment many thousands of trichinæ in a free state in the muscular tissue. Their not being encysted was a sure sign that they were of recent importation. In the intestines he found a vast quantity of adult trichinæ, male and female, and perceived the bodies of the latter filled with living embryos similar to those existing in the muscles. Thus Dr. Zenker, for the first time, proved that in the same person there may exist adult trichinæ in the intestines and their larvæ in the muscles; so that the latter could only have got there by piercing the intestine, either by direct migration or by the blood and chyle. Upon inquiry, he found that the girl had eaten pork from a pig killed on the 21st of December, 1859, and that both the farmer and his wife with whom she lived had been attacked with similar symptoms, but had recovered. From all these facts Dr. Zenker arrived at the conclusion that there exists in man a disorder resulting from the immigration of trichinæ from the intestines to the muscles, and

that this disorder becomes mortal when the immigration is too considerable in consequence of the ingestion of a large quantity of meat tainted with the parasite. No sooner did this discovery become known than it was confirmed by further observations throughout Europe. In Germany, especially in those places where raw pork is used, hundreds of cases were discovered, even assuming the form of an epidemic, where trichinated pork had been sold.—*Galignani's Messenger.*

Source of Potash in Wool.—We have before adverted to this. It appears that the greatest portion of the alkali is in association with sudoric acid. Messrs. Maumevé and Rogelet have established several large manufacturing centres in France for its extraction from wool, and the following statistics are given by them. A fleece of wool weighing 8 lbs. yields on an average about $1\frac{1}{4}$ pound of sudorate of potash, which will give about seven ounces of pure potash. Now if it is considered, that 30,000,000 pounds of wool are annually washed in Rheims, the same quantity at Elbœuf, and 4,000,000 at Fourmies, it would appear that about 2,250,000 pounds of pure potash might be obtained from this source.

Wholesale Poisoning of Deer by Yew.—It is stated that a number of deer in the park of the Duke of Beaufort, at Badminton, have been poisoned in a singular manner. There is a large yew tree in the park, the branches of which are some feet from the ground. The late snow bore down the branches until they were within reach of the deer. The animals nibbled the leaves, and between thirty and forty have died, and a number are still (Feb. 18th) suffering from the effects of the poisonous juice of the leaves.

Wine Ferments.—M. Bechamp avers, (1) that the presence of air is necessary neither for the development of the ferment nor the commencement of the vinous fermentation, and that the grape brings everything necessary for the perfect accomplishment of all the phenomena; (2) that the surface of the grape may carry the sporules and globules of the ferment; (3) that the stalks and leaves of the vine may carry the same organisms on their spores, which may, in fact, be met with on various parts of other vegetables. The author found, by experiment, that he could set up fermentation in a solution of sugar, by introducing grape stalks and vine leaves, and also by the petals of the red poppy. A microscopic examination of the waxy matter on a ripe grape, he says, reveals the presence of organised bodies identical with those produced in fermentation.

THE VETERINARIAN, MARCH 1, 1865.

Ne quid falsi dicere audeat, ne quid veri non audeat.—Cicero.

OUR PROVINCIAL MEDICAL ASSOCIATIONS.

In the history of veterinary medicine, the formation of *provincial veterinary medical associations* will constitute an epoch: an epoch to be particularised, because of the good accomplished by them. Already they have done much, but more remains to be done. In them we can discern the germs of future usefulness, the full development of which rests with themselves. Never before did the associating together of the members of our profession become so general, nor the desire for union permeate so thoroughly the body corporate. An earnest is already given of what these associations may become. They are free and unfettered, and have before them a fair field for exertion. We like the word independent, nevertheless we would have union. While each society governs itself, still each should support the other, since circumstances may arise that will call forth sympathy and demand co-operation. Individualism has been designated offensive crotchetiness and porcupine isolation, or as tending thereto; hence there should exist no estrangement among the members of a common profession. Like a Roman phalanx they should stand, shoulder to shoulder, giving mutual support, and arousing in each other energetic action. Reciprocity of interest will create reciprocity of feeling, while at the same time the independency of each may be maintained. It is in cases of emergency that the benefit derivable from this will be manifested. Warm advocates as we are for union, we have never contended for uniformity. 'Tis a figment, a mere myth, for whatever plan may be laid down, and however well intentioned it may be, it would be soon broken through. Nevertheless, a judicious system will always be desirable and will

support itself, certain contingencies being anticipated to arise, which, however, will right themselves in the end, or means may be devised to obviate any evil consequences. In the fore-front we have ever placed the unification of the profession as being most desirable for accomplishment. It is the want of this that renders all our endeavours so ineffectual. What do we as a body? Propositions have again and again been made to form a Benevolent Society, also one for the mutual protection of its members when suffering from injustice, and what has been the result? Failure arising from a want of unity. Were we united we could defy all the encroachments of the charlatan, or sustaining injury, whether individually or collectively, either in a pecuniary sense or by slander "with its thousand tongues," our recuperative powers would soon restore what may have been for a time lost. But disunited as we notoriously are, manifestations of resistance are of little avail, and each has to look to himself, no support from others being afforded him. May we not anticipate that the provincial veterinary associations which are already formed, and those to be hereafter formed, will take such subjects as these into consideration, and, constituting as they do so many centres whence force may emanate, that which is desiderated may be obtained? We have already said that what they have already done is an augury for good, an earnest of what may be expected from them hereafter. It has afforded us much pleasure to have our pages chosen as the vehicle of communicating to the profession the progress they have already made—for in this there has been uniformity—but we look to them for still greater things; to their becoming the medium for the interchange of opinions, and a free discussion on subjects by which alone real advancement can be made; for when this is true and honest, it will be accompanied by the results of experience, the basis of all true knowledge. It is with the moral as with the physical forces—in them is great inertia; only this difference exists, the latter is increased by concentration, the former by dispersion.

It would be well, perhaps, could we solve one of the problems of the age—"How to secure the liberty of each indi-

vidual, and the unity of the whole." But we cannot, and therefore must leave it untried. This we believe, union gives strength, while division leads to weakness and social ruin. At these meetings our professional brethren become better acquainted with each other, they are led to estimate more highly each other's worth, petty jealousies and unjust suspicions are removed, asperities are rubbed down, they can and do trust and believe each other, and not in churlishness say—

"There's no trust,
No faith, no honesty in men; all perjured,
All forsworn, all nought, all dissemblers."

But rather, although all may not see alike, they give to each other credit for sincerity, remembering that no one is faultless, while it is but natural for each to think that his view is the correct one; still they know, "to err is human," and exercising the God-like power of reason if oneness of opinion does not obtain, at least no disagreement shall be permitted to result, marring the promised good.

"What is a man
If his chief good and market of his time
Be but to sleep and feed? A beast, no more.
Since He that made us with such large discourse—
Looking before and after—gave us not
That capability and God-like reason
To fust in us, unused."

Much as we have been gratified to report from time to time the onward progress of the provincial associations, we do confess that our pleasure was considerably enhanced at receiving an official report from the secretary, Professor Tuson, of the "Veterinary Medical Association," holding its meetings at the Royal Veterinary College, London. Memory carried us back to the time when we assisted at the re-establishing of that institution, placing it on a firmer basis, and for many years we gave to it our sincere though feeble support, feeling convinced—and in this we have not been disappointed—that much good would result from it to the profession. We are believers in "good by antago-

nism," provided always that the contest be conducted in a right spirit, and the motives of the combatants correspond thereunto. The "boy is often father to the man;" indeed, the latter is only the development of the former, and talents are sometimes altogether lost through the mental powers not being properly exercised in early life. Again, it is well known that one person sees what another does not, and even truth often presents itself in different aspects to different individuals, all not being possessed of the same powers of discernment. We can now look back some years, and can call to our remembrance young men who, on their first becoming members of the society we are adverting to, were quite unable to express in appropriate language what they wished to communicate, but being interested they took an active part, and in the end became ready in debate. Who will say that in after life this did not prove an advantage to them? Moreover, during these debates, facts connected with veterinary science are accumulated, theories are investigated, and principles shown to be the only true guides to practice.

Heartily do we wish continued prosperity to these associations, nor will we slacken in our endeavours in every way to promote this; thus co-operating with our professional brethren, not forgetting that their cause is ours, and remembering what the poet has said:

> "To thine own self be true,
> And it must follow, as the night the day,
> Thou canst not then be false to any man."

Cordially do we endorse the sentiments expressed by Mr. R. Greenock at the late meeting of the West of Scotland Veterinary Medical Association. "It is the province of our association (and the same may be said of all kindred ones) to dispel the fogs of mystery and exclusiveness which have a tendency to gather around us in petty jealousies and antagonism, and to substitute a clear atmosphere of scientific light and truth, which will illuminate and expand our minds."

Review.

Quid sit pulchrum, quid turpe, quid utile, quid non.—Hor.

Case of Poisoning by Arsenic from External Application: transferrence of the Poison from the Skin to the Stomach.

Chronic Poisoning by Mercury through the Skin and Lungs. Death after Four Years.

Case of Poisoning by Corrosive Sublimate. Death in Seven Days, &c., &c. By Alfred S. Taylor, M.D., F.R.S.

The above cases, with others, and observations on medical jurisprudence, by Dr. Taylor, are full of interest. Undoubtedly the subject of poisons, whether in reference to the destruction of the life of man, or of animals placed lower in the scale of creation than he, is one of considerable importance, and in a corresponding degree calls for the earnest application of all methods tending to its elucidation. Among these methods none can supersede the aid of chemistry, since by its laws the lesions caused by the more energetic poisons can alone be accounted for, and also the action of antidotes. On this account toxicology has ever found a place in the curriculum of the student of medicine, practising which branch he may—the human or veterinary.

Unquestionably the progress of science has tended to render comparatively facile and simple that which was once complex and difficult; and modes of analysis have lately been devised on which reliance may be placed; yet how often is it the case that here, too, we find not only doubts to exist but discrepancies and disagreements, even among those who have made this subject their especial study. From the comparatively large quantities of some of the toxic agents required to destroy the life of animals, the analyses, as carried on by members of our profession, do not call for that minuteness and delicacy demanded for those of the human subject. Moreover, the conclusions arrived at are not attended with the like serious consequences; nevertheless, from both a demonstration of the truth is equally demanded. We are not inclined to think there has been so much indifference manifested on the part of our profession to this division of science

as the non-possession of the materials and conveniences for carrying out satisfactorily inquiries of this kind; coupled, perhaps, with the fact that few persons are found who like to take upon themselves the responsibility connected with these investigations. The same thing obtains among those practising the sister profession; hence the frequent application to those analysts who have made this subject their particular study, from which there is doubtless an advantage derived. Nevertheless, the leading facts connected with toxicology should be known by all medical men, to be applied by them in cases of emergency. We hail, therefore, with much satisfaction the assurance given us by Professor Tuson, of information from time to time being laid before the members of the Veterinary Medical Association on this interesting and important subject; confident that there is neither intention nor desire to confine what is communicated to that institution. Our pages will hereafter record, we trust, many reports from his pen. To him we are already indebted for several scientific contributions.

The cases by Dr. Taylor that have evoked the foregoing remarks, are instances of poisoning in the human subject, rendered the more interesting on account of the mode of the introduction of poisons into the system. As with therapeutic agents, so it is with poisons—the way they enter the organism modifies, if it does not determine their action. The skin, either abraded or whole, may prove a medium. This was remarkably shown in the first case of Dr. Taylor's, in which arsenic mixed with white precipitate had been applied to a child's head affected with porrigo, from the effects of which she died, the arsenic having been absorbed into the system, and traces of it found in the liver, stomach, and intestines. "Some years ago," says Dr. Taylor, "traces of arsenic being detected in the mucous fluids of the stomach would have been regarded that, whether applied externally or not, arsenic must have been swallowed by this child. Such an inference, however, is not justified by recent experience. It has been incontestably proved by experiment, that the mucous surface of the stomach and bowels is a medium for the elimination of poisons; and unless this fact is borne in mind by medical witnesses the greatest errors may be committed, and innocent persons condemned on erroneous charges." This case is followed by others of a similar kind.

Perhaps the more remarkable instance of poisoning by external application is that "by mercury through the skin and lungs, death taking place after four years." The man

was a furrier, and had been employed for the above period to pack up the skins of animals that had been washed with an acid solution of the nitrate of mercury and afterwards dried, a process which is supposed to soften the skins and thereby render them more suitable to be afterwards made up into wide-awake hats. By chemical analysis after death, mercury was shown to exist in the kidneys, liver, and brain, the former organs having the larger amount, the last-named organ the smallest. In this case, in all probability, the skin was entire, hence the slow absorption of the agent. We have rubbed over the skin of the horse as much as four ounces of medicinal hydrocyanic acid, and no visible effects have supervened, whereas a drachm, or less, inserted under the skin in a piece of sponge, has caused all the characteristic effects of this compound. In like manner, if setons be medicated, action will be induced according to the agent employed.

Other cases of poisoning, and by other agents, are given by Dr. Taylor in these papers. We pass them over, and extract only the following:

8. *Poisoning by Nitrobenzole.*

"This liquid, which is largely employed as a substitute for the essential oil of bitter almonds in perfumery and confectionery, has now taken its place among narcotic poisons. In the second edition of my work on Poisons (1859) some experiments were quoted from the 'Lancet' (Jan. 10, 1857, p. 46), showing that one drachm of nitrobenzole killed a rabbit almost instantaneously, and half a drachm mixed with two drachms of water rendered a cat insensible for several minutes, a slimy mucus flowing from its mouth for several hours afterwards. The animal refused all food, and died in twenty-four hours. ('On Poisons,' 1859, p. 701.) In 1859 the late Professor Casper, of Berlin, published an account of this liquid under the name of "A New Poison"—"Ein neues Gift." ('Vierteljahrschrift,' B. xvi, p. 1). Its effects on a rabbit and a dog are here described. Two drachms of it were given to a rabbit without any symptoms being produced; two drachms were then given to the animal at intervals of ten minutes or a quarter of an hour, until the rabbit had taken one ounce. In a minute and a half after the last dose, the animal fell suddenly on its left side. The pupils were dilated, while the limbs and tail were strongly convulsed. The animal died in a minute. The dose was probably unnecessarily large, but the result shows that nitrobenzole in a large dose destroys life rapidly. On opening the body the powerful odour of the liquid was everywhere perceptible, even in the blood. This odour remained strongly in the body when it was again examined, *fourteen days* after death. Twenty cubic centimetres (about five drachms) given to a middle-sized dog produced no remarkable symptoms. After some hours the animal was observed to be dull and languid; in twelve hours there was a profound coma, with slow respiration, and coldness of the skin, but there were no convulsions. The animal was then killed. All the solids and liquids of the body, including the blood, had a strong odour of the poison, and some drops of the oily liquid were separated from the contents of the stomach. The fluid on

which it floated had a strong alkaline reaction. The blood retained the odour for several days."

9. *Poisoning by Aniline.*

"This is a narcotic poison in liquid or vapour, resembling nitrobenzole in its toxicological effects. Schuchardt found that a small rabbit was killed by sixty drops in six and a quarter hours, and a large rabbit by one hundred drops in four hours. There was loss of sensibility, with loss of heat; and violent clonic and tonic convulsions ensued, which continued until death. From experiments hitherto performed, it does not appear to be an active poison as a liquid, and it seems to affect the spinal marrow more than the brain. It has also a local irritant action. Dr. Turnbull gave half a drachm of the sulphate to a dog. In two and a half hours, the animal vomited, and an hour later it was purged. It became dull, weak, and tremulous; the pulse was rapid, and the breathing laboured. The feet were cold, the hind legs paralysed, and the tongue was of a blue colour. In five hours the symptoms abated, and the next day the animal had recovered. ('Lancet,' Nov. 16, 1861.)

"Dr. Letheby found that aniline given to dogs and cats in doses of from twenty to sixty drops caused a rapid loss of voluntary power. The animal staggered and fell upon its side powerless, the head was drawn back, the pupils were dilated, the breathing was difficult, and the action of the heart tumultuous; there were slight twitchings or spasms of the muscles, and the animal quickly passed into a state of coma, from which it did not recover, death taking place in from half an hour to thirty-two hours. On inspection the brain and its membranes were congested, the cavities of the heart were nearly full of blood, and the lungs slightly congested. The blood all over the body was black and coagulated. The poison was easily discovered in the brain, the stomach, and the liver, although it was found that, as nitrobenzole is changed into aniline, so in some cases aniline and its salts are converted into mauve or magenta. This arises from the oxidation of the salts, and it has been especially observed on the surface of the body. ('Proc. Royal Society,' No. 56, 1863, p. 556.) There is no instance recorded of the effects of aniline as a poison on the human body. It is a liquid of a nauseous odour and taste, and could hardly be taken or administered without the consciousness of the person taking it. The salts appear to have very little action. They have been used medicinally in large doses without producing any unusual effects."

There are, however, facts which show that the vapour of aniline, even when much diluted, exerts a poisonous action on man.

Translations and Reviews of Continental Veterinary Journals.

By W. Ernes, M.R.C.V.S., London.

"*Repertorium*," Stuttgart.

NOTES ON VETERINARY SUBJECTS IN LONDON.

By Professor Weiss, of the Veterinary School of Stuttgart.

Professor Weiss came to London (1862) at the time of the Exhibition. He visited the Royal Veterinary College, and several private veterinary establishments, of which he gives the following account in the *Repertorium*.

The Royal Veterinary College is situated far from the centre of the town; it is a square, low, brick building, without any pretensions to external appearance, being inferior, in this respect, to many of the Continental veterinary schools. It dates from 1791. It is, like the veterinary schools of Edinburgh and Glasgow, a private establishment, but, unlike them, has Her Majesty the Queen as its Patron. The Duke of Cambridge is its President; and there are six Vice-Presidents, among whom are two dukes and one marquis. The Committee consists of seventeen members, among whom is the Director of the College, Professor Spooner. There are, besides, two Trustees, a Treasurer, a Banker, a Solicitor, and an Accountant. The course of lectures is divided as follows:—The Director, Mr. Spooner, is at the same time lecturer on the anatomy, physiology, and pathology of the horse. Professor Simonds lectures on the anatomy, physiology, and pathology of cattle. He is one of the editors of the *Veterinarian*, and author of several works. Professor Varnell teaches descriptive anatomy. Professor Tuson is charged with the course of chemistry and materia medica. The clinic of the horse is taught by Messrs. Spooner and Varnell; that of cattle by Mr. Simonds. There is, besides, a Demonstrator of Anatomy and Curator of the Museum, and a Dispenser, Clerk, and Collector.

Up to 1791 veterinary medicine in England was exclusively in the hands of shoeing-smiths, coachmen, and other empirics. It was at that epoch that a society of shareholders established the Veterinary College, on the spot where it now stands. Subsidised at first by parliamentary grants, it has for the last fifty years subsisted without any such aid, the

subscriptions of the members being understood to be sufficient. At first the horse was only considered, but, in 1842, at the request of the Royal Agricultural Society, which annually contributes £200, a professorship on anatomy, pathology, and clinic of the ox, sheep, and other domestic animals, was created. The Royal Veterinary College of London has, from the time of its first establishment, created a great many veterinary surgeons for the army and private practice, the services of whom are considered very important. As we have before stated, this establishment is maintained by subscribers, of which there are two classes. A donation of twenty guineas creates a subscriber for life, while a subscription of two guineas per annum gives the same privileges during the time of the subscription. A subscriber is entitled to send any number of horses or other animals belonging to him to the infirmary of the College, either for examination, advice, or medical treatment, and also to receive a verbal or written opinion from the professors. If, however, the number of animals should exceed twenty, then the subscriber has to pay either 10*s.* 6*d.* for every examination or opinion, or £5 per annum, instead of the usual subscription. Three shillings are charged per night for the keep of a horse in the College; 1*s.* 6*d.* for an ox or cow; and a smaller charge is made by the director for lesser animals. The professors are not obliged to visit at the domicile of the subscribers. The College has also a forge, and experienced shoers, to shoe the horses of the subscribers; the price of a set of shoes is 5*s.* The members of the Royal Agricultural Society have the privilege, as subscribers, to send their horned cattle, sheep, and swine. Horses not being the property of subscribers are not admitted; but non-subscribers can have their horses examined for soundness by paying a guinea per examination, for which they receive a written declaration; medical advice is given for half-a-guinea. Each pupil pays twenty-five guineas, for which he has the privilege of attending the courses of lectures and demonstrations clinic, &c., up to the time of his examination; submitting, however, to the rules and regulations of the College. There is no preliminary examination on entering. To be admitted for an examination for the diploma the student must be twenty years of age, at least, and be provided with a certificate of the professors, stating that he has at least attended two courses of the lectures on the anatomy, surgery, pathology, chemistry, &c.; he must also give proof of having attained a certain skill in dissecting, and of having assiduously followed the clinical demonstrations. The session begins in

October, and terminates in May, but the clinic continues the whole year. The examinations take place in May and December, before a committee, of which the professors form part *ex officio*, and which is composed, besides, of distinguished medical men and veterinary surgeons. The successful candidate receives a diploma, and is inscribed in the list of veterinary surgeons. The number of students is about 100. The hospital can receive nearly ninety horses, which are mostly in loose boxes. At the time of M. Weiss's visit they were nearly all full. The collections in the museum are insignificant. On the other hand, the preparations are well placed and preserved, and many seem of ancient date. The number of subscribers, in proportion to the population of London, where there are so many proprietors of horses, is comparatively very small. In 1861 the number amounted to only 747.

Among the private veterinary establishments M. Weiss says that some are of a grandeur which is nowhere equalled. This may be easily understood in a town where the number of horses of all descriptions is enormous, and where they always go at full trot, and consequently accidents and sickness must be in proportion, and their time of service very short.

The most important veterinary establishments are those of Messrs. Field and Mavor; that of Messrs. Mavor (three brothers) is situated in Park Street; the buildings are new, very elegant, and conveniently distributed. They can take about fifty horses into the hospital; the ride and passages are covered with glass. There is also a large forge, in which fifteen smiths are employed. In the month of May, when they are most busy, they put on as many as 300 shoes in a day; independent of that, Messrs. Mavor have another forge in the town, where twelve men are employed. These gentlemen have invented a shoe which, according to them, prevents horses from slipping, to a certain extent, on the pavement of London; this shoe is provided with a raised rim on the under and outer surface. Mr. Doller, another veterinary surgeon, who has five forges, makes similar shoes. Messrs. Ernes and Lowe, veterinary surgeons, who have a large connection, have also fine places of business, make shoes which only cover the anterior of the foot, while the heels and frog are naked and bear on the ground. Messrs. Mavor employ ten horses for their service in town and the country. They have a conveyance to transport sick horses which are unable to walk to the hospital; the interior of the vehicle is constructed so as to sling the horses during the journey.

(*To be continued.*)

YORKSHIRE VETERINARY MEDICAL SOCIETY.

OFFICIAL REPORT.

The Second Annual Meeting and First Annual Dinner of this Society, were held at the Queen's Hotel, Leeds, on Friday, January 25th, 1865. The Meeting at 1.30 P.M. Present, the President (Mr. Dray) in the Chair, Professor Spooner, Mr. Hunt, P.R.C.V.S., Mr. P. Taylor, P.L.V.M.A., Mr. Hunting, P.N.E.V.M.A.; Messrs. Thos. Greaves, Jno. Lawson, and W. Haycock, Manchester; Messrs. Cartledge, Sheffield; Brooks, Pilkington; Freeman, Hull; Mc Taggart, Halifax; Patterson, Dewsbury; Kich, Federal Army; Bale, Otley; Pratt, Masham; Nicholson, Womersley; Anderton, Skipton; Fishwick, Gayrase; Elam, Huddersfield; Astin, Huddersfield; T. Wainwright, Sherburne; Schofield, Pontefract; Carter, Bradford; Horne, Barnsley; C. Secher, Knaresboro'; W. Edmondson, Harnby; W. Taylor, Netherby; Broughton, Leeds; G. Smith, Darnton; Wood, Moor Town; Falding, Wakefield; Cuthbert, Leeds; Naylor, Wakefield; and the Secretary. Six new members were elected, viz., Messrs. Freeman, Hull; Hedley, Richmond; Elam, Huddersfield; Elam, Brighouse; T. Wainwright, Sherburne; and B. Smith, Darnton. At the conclusion of the preliminary business, the President read the following inaugural address, which was listened to with marked attention, and rewarded with hearty applause.

GENTLEMEN,—The formation of Provincial Veterinary Medical Associations is now an accomplished fact—"a great fact." And while I rejoice in this, from a conviction of their being instrumental for much good to the profession, I may be permitted to express my regret, not unmixed with some degree of surprise, that so many counties in England yet exist which have not followed the examples so nobly set them. But Archbishop Whately has truly said, "it is a folly to expect men to do all that which they may reasonably be expected to do;" and to this, I suppose, we must be contented to refer the remissness shown by some of our professional brethren.

Before entering upon the more immediate subject of my address, allow me to express to you, as far as words will permit, how highly I estimate the honour you have conferred upon me, in re-electing me to the office of your President for another year. I felt at the time of its proposal, and still feel, how inadequate I am to fulfil the duties that devolve upon me, and which you have a just right to expect. Nevertheless, my best efforts shall be made to perform these duties, and having already experienced your kindness, I know I shall not fail in obtaining all the assistance I may stand in need of. May I venture to add, that I do not think the re-election of the same individual to such an office as your president the most conducive to the advancement of your interests or the promotion of

the objects you have in view. From no one, perhaps, could this observation better come than from myself. There are among you others far more able than I am, although none more desirous, to contribute to your advancement. However, "the deed is done;" on me the dignity has devolved unexpectedly and undeservedly, and again I promise you to acquit myself to the best of my abilities.

I need hardly state that the object we all have in view is the advancement of veterinary science, by giving to each other, and to it, mutual support. Progress, we have been lately told, is the motto of Englishmen, and all around us we see this to be taking place. It ramifies, too, through every section of the community, and dare *we* stand still? Were we foolish enough to attempt to do so, the result need not be told. I am not ignorant of the fact, that some persons think lightly of science; such, too, often plume themselves on their practical knowledge. I would ask what the worth of this is, or would be, if not founded on scientific principles? The fact is, all true practice is so founded, although those who thus talk and thus act, are ignorant of it. They have obtained their knowledge possibly by tradition; but were this traced to its origin, science would be found to be at its foundation. It has been well remarked, that so-called practical men have affected to despise the teachings of science because they have never been educated to understand their importance; and it is not until populations have been decimated by disease and pestilence, that local self-government rises to a dim perception that there is something in good drainage, good water, and a pure atmosphere. Few of us can be ignorant of the fact, that middle class education has lately occupied the serious consideration of many of our leading men, and that Government has stepped in, in the science and art department, having the same object in view. By them, pecuniary assistance is afforded in very many branches of natural philosophy, and examinations are held as to progress every November, in London, Edinburgh, and Dublin, on these subjects. And why do I mention this? Simply because we, being among that section of the community, "the blood and sinew of the land," unless we continue to progress, we shall soon be beaten in this march of mind. But it may be asked, what is Science? To this I reply in the language of the late Prince Consort, when he said:—"The metaphysician has answered this question in various ways, more or less satisfactory to himself or others. To me, science in its most general and comprehensive acceptation, means the knowledge of what I know, the consciousness of human knowledge. Hence to know, is the object of all science; and all special knowledge, if brought to our consciousness in its separate distinctiveness from, and yet in its recognised relation to, the totality of our knowledge, is scientific knowledge. We require, then, for science—that is to say, for the acquisition of scientific knowledge,—these two activities of our mind, which are necessary for the acquisition of any knowledge—analysis and synthesis; the first, to dissect and reduce into its component parts the object to be investigated, and to render an accurate account to our-

selves of the nature and qualities of these parts by observation; the second, to recompose the observed and understood parts, into a unity in our consciousness, exactly answering to the objects of our investigation. The labours of the man of science are therefore at once the most humble and the loftiest which man can undertake. He only does what every little child does from its first awakening into life, and must do every moment of its existence, and yet he aims at the gradual approximation to Divine truth itself. If, then, there exists no difference between the work of the man of science and that of the merest child, what constitutes the distinction? Merely the conscious self-determination. The child observes what accident brings before it, and unconsciously forms its notion of it. The so-called practical man observes what his special work forces upon him, and he forms his notions upon it with reference to this particular work. The man of science observes what he intends to observe, and knows why he intends it. The value which this particular object has in his eyes is not determined by accident, nor by an external cause, such as the mere connection with work to be performed, but by the place which he knows this object to hold in the general universe of knowledge, by the relation which it bears to other parts of that general knowledge. To arrange and classify that universe of knowledge becomes, therefore, the first and perhaps the most important object and duty of science. It is only when brought into a system by separating the incongruous, and combining those elements in which we have been enabled to discover the internal connection which the Almighty has implanted in them, that we can hope to grapple with the boundlessness of His creation, and with the laws which govern mind and matter." Truly has Lord Stanley stated in reference to the immediate and practical good to be derived from schools of science, that the result is twofold:—"Partly it tends to give men practically engaged in various pursuits a knowledge of principles which they have to apply. It enables them to work intelligently as men, and not blindly as machines. Partly also it serves to correct a vague, loose habit of thinking, by a training more strict and severe, than that of ordinary life. Even in the education of our upper classes—of those who ought to be the brain-workers as opposed to the hand-workers of society—too much time is given to the study of man, and too little to those of nature." Mr. Buckmaster, of the Science and Art department, already referred to, speaking of the numerous applications of science to the industrial arts, says:—"It is that knowledge which elevates the labourer, and raises his occupation to the dignity of an intellectual calling. Apart from its industrial value, science has great educational uses, and we have made little progress in education until we have taught men to govern and discipline their own minds by the study of some branch of exact science. But men look at science as they do at some marketable commodity. How much? They have no sympathy with men who look for the cause of the many-coloured rainbow, the deflection of a compass needle, and the grand phenomena of a thunder-storm. But when science teaches men how to

preserve eggs, and keep butter from becoming rancid, or to go to America by a shorter route, then they fall down and worship the golden calf. But science perfectly understood is a religion, and its philosophers are the high priests of nature. The earth on which we live was given to us to make us think, and to stir up thought. It is full of wonder and difficulty, and can be only understood by the constant exercise of our intellect. The earth is not a disconnected, disorderly mass; it is a beautiful whole, stamped throughout with unity and design, so as to be the reflection of the infinite Father of us all. Such a universe demands our thought, and we are placed in it to think, or why was this power breathed into us? All are capable of this thinking. The little child who casts an inquiring eye on a new toy, and puzzles you with a question, has begun to think; he is endeavouring to seek consistency and harmony of thought in the outward manifestations of nature. The teachings of natural science have great moral tendencies. The man who can read something of God in everything, will almost be good in everything. The little insect and flower should be studied, although simple, common, and humble. The Divine Being has impressed these works with His perfection—they are radiant with beauty, wisdom, and beneficence. If one were to enter the cottage of the labourer, and see the walls covered with the choicest works of art, and every corner occupied with statuary of the most exquisite workmanship, and if he were told that neither man, woman, nor child ever looked upon these miracles of art, how anxious he would be to open their eyes to some of their beauties. But every man is living daily within sight of the works of a greater artist than either Raphael or Angelo. Beauty is an all-pervading presence. It is unfolded in the numberless flowers of spring. It waves in the branches of the trees, and the green blades of grass; the ocean, the mountains, the clouds, the stars. The rising and setting sun overflow with beauty. Now this beauty is so precious, the enjoyment it gives so pure, and so refined, that it is painful to think the majority of men are as insensible to influences of this kind as if they had been all their lives in a dungeon."

To point out the advantages which we derive as a profession from the application of science might be thought at the present time altogether uncalled for. They are self-evident. We see them in the discovery and employment of new remedies for disease, in the setting aside as erroneous opinions once firmly maintained to be right; in the explanation of the phenomena of life and organisation; the laws of hygeine, and the enlargement of our bounds of general knowledge by which the domain of our usefulness is extended. Certainly no kind of mind-culture is to be objected to; but especially is that to be lauded which has for its basis science. It is opposed to all idleness and self-sufficiency, and makes the student thereof a better, because more useful member, of society. Science is in fact a commonwealth demanding the co-operation of all its votaries. We enter into men's labours, and they into ours; and thus progress is made, for science is ever advancing although the ultimatum of things may

never be known: "The great first cause least understood." It is not too much to say that the pursuits of science tend to "give to passing time the appropriate calm of blest eternity."

But to come down from this high standing—too high some may think—although it has been purposely taken by me, inasmuch as I believe that it is to the application of the principles of science we owe our present position in society. Let me give you a practical exemplification of its advantages in the practice of veterinary medicine at the present day as contrasted with what it was in days gone by; when science found no resting-place among the members of the old or no school, but was by them contemned. We can remember the time when bleeding, purging and blistering constituted the triad of treatment; almost verifying the satirical doggrel applied to Dr. J. Letsem—

"I bleed, I purge, and then I sweats them,
And if they die, why then—I Lets'em."

We need not go back to the darker days of farriery, remarkable only for ignorance and cruelty, when boiling oil, and even melted lead, were poured into sinuses; the bodies of animals cut and hacked as if the poor brutes possessed no feelings; when the remedial agents resorted to constituted a mass of heterogeneous substances, the one counteracting the effects of the other, and the whole forming a compound which might or might not prove of benefit, or be the means of assisting nature in the removal of disease. Many other absurdities, to designate them by no other term, might be adduced. But modern practice rests on a firmer, because a scientific basis. We are conversant with the anatomy of the parts on which we are operating, and also their functions, so that we are not floundering about in the dark; nor do we encloak ourselves in mysteries and peradventures; while our pathology is founded on physiology, and our aim and effort are by milder and yet truer methods to bring about a restoration to health. All this, I maintain, we owe to science; and here it is we see the difference between the educated veterinary surgeon and the mere pretender, the empiric. Nevertheless such characters will ever exist, and, therefore, we must not relax in our endeavours, but having begun, still go onwards, being convinced that we are in the right path, which as yet we have only began successfully to walk in. Having adverted to the education of the middle classes and their examinations, I may be permitted to add that the formation of, to be called, "County Colleges" is now being advocated in several of the leading counties of England, in which the pupils are to be instructed, not only in the usual branches of education, but the principles of the leading sciences are to be taught, especially chemistry as applied to agriculture. You are also aware that the question of the better education of those who till the soil has been lately taken up by the Council of the Royal Agricultural Society of England, and although it has awakened a difference of opinion, and any interference with the middle-class education of farmers' sons deprecated, yet there

can be no doubt that the science of agriculture, with collateral divisions, will be more inculcated and earnestly sought after than ever has been the case hitherto. Who for a moment can question the benefits that must arise from the agriculturist being conversant with the physical sciences, when steam is now resorted to in many ways to lessen farm-labour? When the laws of chemistry are proved to be in operation in rendering the soil fit for the production of certain crops to be obtained on it; in the feeding of cattle, and the preservation of their health, any deviation from which it is the province of the veterinary surgeon to correct. Further, University College has instituted a chair of Animal Physiology for non-medical students, which, we are told, has proved successful; and many of the members of the Schoolmasters' Social Science Association attend it, they being desirous of making physiology a subject of instruction in their schools: which indeed has been already done in many schools among the more advanced pupils. All this surely is enough to keep us on the alert. If not, I will only mention one incentive more. These instructions and examinations are not to be confined to young men, but the other, the gentler sex, are to be taught in the same way. Here will be a trial for your gallantry, gentlemen? The silken cords of love are soft, but what say you to blue stockings? Unquestionably at the present day intellectual education of a high order is being inculcated, which will ultimately diffuse itself through the mass, nor is it confined to this country; we must, therefore, be up and doing lest we be nowhere in the race. It has been eloquently remarked—"Education is a companion which no misfortune can depress—no clime destroy—no enemy alienate—no despotism enslave. At home a friend; abroad an introduction—in solitude a solace—in society an ornament. It shortens vice! It guides virtue! It gives at once grace and government to genius. Without it what is man? A splendid slave—a reasoning savage! vacillating between the dignity of an intelligence derived from God and the degradation of brutal passion."

To come home to ourselves. The suggestion of the formation of the Yorkshire Veterinary Medical Association is deservedly due to our excellent honorary secretary, and one or two other gentlemen, and to make a beginning, I invited in the latter part of September, 1863, the following members of the profession to my private residence, viz., Mr. Williams, Mr. Carter, of Bradford, and Messrs. Cuthbert, Broughton, and Mitchell, of Leeds; the latter did not attend, and alleged as a reason a sudden engagement. The result of our deliberations was the issuing a circular of invitation to all qualified veterinary surgeons practising within a radius of fifty miles from Leeds, and the calling of a preliminary meeting, to be held at the Queen's Hotel, Leeds, on Friday, 9th Oct., 1863. Mr. Williams, of Bradford, having been appointed Hon. Sec. *pro tem.*, issued the circular signed by the above-named parties and Messrs. McTaggart and Lord, of Halifax; these seven gentlemen representing three of the principal towns in the West Riding. It

is now well known that the response was most hearty. The 9th of October witnessed a gathering of veterinary surgeons at Leeds that will not soon be forgotten. It will be a day ever memorable and auspicious in the annals of veterinary medicine, as being one upon which was inaugurated a great movement for the advancement of our profession. With the exception of one dissentient, the meeting was both unanimous and enthusiastic, revealing a feeling of fraternal accordance which only wanted an opportunity to develop itself,—a feeling of reciprocity, an intense and earnest desire to elevate our position, and to advance the interests of the profession. The dissentient referred to will be no further noticed by me. Sufficient has already appeared in the journal of the profession, the *Veterinarian*, and those concerned know that all I have stated is in consonance with truth.

The meeting then proceeded to discuss the other rules submitted to them by the Hon. Sec. *pro tem.*, passing most of them, altering some, and expunging others. The members afterwards appointed the office-bearers for the first year. They did me the honour of electing me their first president; Messrs. Fryer, Secker (Knaresborough) and Carter, vice-presidents; Mr. Williams, honorary secretary, and Mr. Lord, treasurer, were chosen by a unanimous vote and acclamation. The next meeting of the Society was held at St. George's Hall, Bradford, and was numerously attended: four new members were enrolled.

Mr. Secker, of Knaresborough, read a paper on "Laminitis," which was the first essay introduced to the Society, and when finished, an animated discussion followed. Mr. Secker in his treatment, recommended the exhibition of cathartics, followed by carbonate of soda, and the iodide of potassium, attributing to this latter remedy peculiar therapeutic value in this disease. Many of the members, although differing with the essayist, promised to give his mode of treatment a trial. The third meeting was held at the Crown Hotel, Harrogate, 11th July, 1864, when Mr. Martin Naylor, of Wakefield, read a paper on the "Natural History of the Horse." The essay showed great research, but did not excite any discussion. The last quarterly meeting was held at the Unicorn Hotel, Ripon. The selection of this town was felt by many to be ill-chosen, it being in the same district as Harrogate, where the last meeting was held; nevertheless, it was numerously attended. Mr. Fryer read a most practical paper on "Hernia," which was well received, and elicited a good discussion. The essayist, from his extensive practice (particularly among first-class horses) was enabled to give the Society the benefit of his experience, as well as that of his late respected father. The financial statement was afterwards given by the treasurer, showing a balance above £20 at the Post Office Savings Bank, Halifax, to the credit of the Association. The election of office-bearers next took place, when the Society did me the honour to re-elect me their president; they also re-elected the secretary and the treasurer, and Messrs. Cuthbert, Martin Naylor, and McTaggart were elected vice-presidents. Thus closed the first

year of the Yorkshire Veterinary Medical Association, in harmony and prosperity, and confident of having done some good. Two actions deserve to be recorded, showing the sympathy manifested towards two members of the profession in a time of anxiety and trouble, viz. to Mr. Forbes, of Reigate, Surrey, who had suffered in an action for alleged malpractice, but who has since obtained a new trial, which has reversed the verdict of the first. The other instance was Mr. Williams, of Bradford (our worthy secretary) who was in April last so unfortunate as to lose a horse after administering to him a ʒv cathartic ball, and in consequence was threatened with an action at law; but upon a *post-mortem* examination being made by Mr. Lord and myself, on the one hand, and by Mr. Broughton (one of our respected members) and by Mr. Collins, of Bradford, on the other, the angry feelings of the owner were calmed down, and after seeing the injustice he was about to perpetrate, offered an ample apology, and to this day he is a firm friend and client of our secretary. I am glad to be able to state that all our transactions and discussions have been characterised by the most perfect concord and good will, and I not only hope this kindly feeling will continue to be displayed, but we shall have a little more controversial spirit exhibited in our debates, a little more friendly disputation, and that members will (without being called upon) spontaneously give the Society the benefit of their experience on the subject under consideration, and endeavour by argument to elicit an animated discussion. I trust these suggestions will be received by you all with approval, and that I shall not have again to express disappointment of any shortcomings in our future deliberations. I also sincerely hope we shall witness an increase of members to our Society this year, and the papers introduced will be of that stamp, not only to reflect credit upon the essayists, but add lustre to our Association. The expenditure of some of the Society's funds for the purchasing of the more expensive surgical instruments, or books of a scientific description, should likewise be mooted and considered. We have funds in hand, and their appropriate disposal might benefit us both individually and collectively.

I should be wanting in courtesy were I to omit to mention, that in conjunction with Mr. Greaves, I attended a meeting of the North of England Veterinary Medical Association in July last, at Newcastle-on-Tyne, and afterwards a handsome dinner, by the kind invitation of their excellent president, Mr. Hunting. At the meeting a paper was read by Mr. Wilkinson, of Newcastle, "On the Applicability of Legislative measures for the Prevention of Contagious Diseases." The importance of such a subject at the present period, deeply concerned us all, and unfeignedly did I regret not being able to contribute any information to the Society upon a theme of the most essential consequence to this country. Probably I may have occasion again to advert to this topic before I finish this address. I need hardly express the gratification I had of meeting Professors Simonds, Varnell, and Gamgee, and Mr. Hunt, on

this occasion. On the 14th September, by Mr. Greaves's pressing invitation, I had the pleasure of being present at a meeting of the Lancashire Veterinary Medical Association, at Manchester. Mr. Greaves, the energetic president of this society, was in the chair, when Mr. Lawson, of that town, introduced a paper on "Tetanus," which gave very great satisfaction, and a practical discussion followed. You well know that the President of the Royal College of Veterinary Surgeons (Mr. Hunt) gave a splendid banquet at Edgbaston, near Birmingham, on the 28th of October last, to which Metropolitan as well as Provincial Veterinary Surgeons were invited, as well as the presidents of the Veterinary Medical Associations. As the proceedings of this sumptuous entertainment have been so lately reported in our journals, it would be both presumptuous and superfluous on my part to occupy your time with any further remarks on it, except that I must be permitted to say, that our united thanks are due to the President of the Royal College of Veterinary Surgeons for his spirited and liberal manner of bringing about a reunion of the profession.

On the 8th of last month I was invited to attend a meeting of the Lancashire Veterinary Medical Association, at which Mr. Howell (who is also a member of our Society) read a most excellent paper, "On Milk Fever in Cows." They were again kind enough to invite me to their first annual dinner at Manchester, on the 11th of this month (January), which I was compelled to decline from ill health. The same cause also prevented me from accepting also a most friendly invitation from the North of England Veterinary Medical Association, to join their meeting and annual dinner, which took place at Newcastle this month.

The above facts I am of opinion should be recorded, as they show that there is a growing disposition among us to be more united, and it is only by thus assembling frequently together we shall attain this desideratum. As a still further indication of our future advancement, I may be permitted to advert to the announcement made by Professor Spooner in his late introductory Address—

"That after much care and thought for the benefit and progress of the profession, the governors of the College have by gradual stages to its requirements, determined to constitute an educational matriculation." This is a most important step in the right direction, for not until preliminary examinations are enforced before students are admitted to the College, do I hope to see that reformation and improvement take place among the future members of our profession, which is so desirable. Without education, no real advancement can take place; but if the resolution of the Governors be faithfully carried out, we may indulge in the expectation of a new era opening to us. We all know that education will not always make the gentleman; but it goes far towards it, and we do know that without it no profession can be acquired. In drawing this address to a close, allow me to say, that if chargeable with any ambitious desires, we are not visionary enough to suppose we are about "to light up another star, wherewith to gem the brow of

night;" but we do hope that the report of our doings will cast a radiance around that will cause others to see their way clearly for the formation of similar associations, thus awakening a spirit of emulation, from which good to the whole of the profession must emanate.

I have been favoured with the following Report from our Inspector of Meat and Markets, which I think cannot fail to interest us, and from which we may derive some suggestions.

To Edward Coleman Dray, Esq. *President of the Yorkshire Veterinary Medical Association.*

Sir,—I enclose you a return of the number of diseased cattle and carcasses which have been brought to the various slaughter-houses of this borough during the *four* years ending the 30th of December, 1864, and which were *examined* by me as inspector of meat, together with the number which were *passed* and allowed to be sold; also the number that were *condemned* as unfit for human food, and destroyed. I also purpose to lay before you a few observations thereupon, as the subject is one of vast importance, whether we consider the welfare and prosperity of the agricultural community, or the health of the public at large.

In looking at the numbers of diseased cattle, sheep, and pigs, which have been brought to the various slaughter-houses of this borough, no doubt you will be surprised at the very large amount of disease which has been prevalent among cattle in Leeds, and wonder how it comes to pass that such cattle are allowed to be brought to the slaughter-houses. I beg to inform you that, owing to the very extensive prevalence of disease, particularly pleuro-pneumonia, among the horned cattle in Leeds and the grazing districts of the neighbourhood, that the committee of the Town Council, after long and serious consideration, thought it advisable to allow owners of stock which were affected with disease, to bring such away at once for the purpose of having them *slaughtered*, and then having them duly *inspected* as to their fitness or unfitness for human food. The consequence has been, that a very large number of diseased cattle and carcasses have been brought to our slaughter-houses. Last year, 1863, out of 737 beasts so brought, no less than 467 were affected with pleuro-pneumonia. They belonged to cowkeepers and graziers in this borough and neighbourhood, and the money-loss to them must have been considerable. I know some who have suffered most severely by this disease among their cattle. Mr. —— last year lost twenty-one out of twenty-five very fine milch cows, worth £20 each, in seven weeks by this fearful complaint. Others have lost large numbers. Mr. —— told me that in four years he lost more than one hundred head of cattle by pleuro-pneumonia. It is a very remarkable fact that this complaint will appear among cattle in certain districts, and others will be almost entirely free from it. This was the case in 1862, when it appeared in the neighbourhood of Otley, extending from Denton Park to Harewood

Bridge, as far as Wetherby and Tadcaster, to as far south as Byram Park. Last year, 1863, the disease broke out at Whitkirk Temple Newsom, and continued its course to Tadcaster—Otley Harewood and Wetherby being almost entirely free. The same remarkable fact appears with regard to a disease which has been very prevalent among young sheep and lambs during the last four years, beginning about Garforth, and Aberford, Bramham, Mickleford, and extending in a line across the country to Kirkhamerton. This complaint seems to attack young stock only. A farmer thus describes the symptoms:—he says that the sheep and lambs appear to be attacked suddenly; they seem very sickly, and then topple over, and would soon die unless slaughtered. Upon examination of the carcasses when dressed, the inside, commencing with what we call the *skirt*, and all along the belly, there appear a number of blood-spots, and these are also found in the flesh in the legs and shoulders. The eyes are peculiarly dull, and I should be inclined to think that the sheep must be almost blind. I have not been able to find any one who could give a proper name for this complaint, and I think that these interesting facts are worthy of the serious consideration of your society.

I will now say a few words with regard to a disease among pigs, which has been very prevalent in this town of late years, namely, scarlet fever, as I call it,—a very large number of pigs have been lost by this disease. This year, early in the spring, it commenced at Sheepscar, at the large piggery of Mr. Watson's, and travelled along the town by way of Mabgate, Leyland's, York Road, to Hunslet, Wortly, and Bramley, sweeping along in its course many a fine pig which had been nursed by poor persons, who by frugal means managed to keep a pig.

Now, sir, will you excuse me for pointing out to your society what appears to me to be a very unsatisfactory state of things with regard to the profession to which you belong. How is it that the services of the veterinary surgeon are not called in either to arrest the progress or to introduce measures for the cure of these maladies? Disease in cattle appears to me to be a work to which the veterinary profession ought to be able to satisfy the wants of the country upon; but what is the case?—why, where is the respectable farmer who ever thinks of calling to his aid the veterinary surgeon when disease affects his stock? How is it that the butcher's services are most in request? is it that the members have neglected this most important branch of their profession? or is it a well grounded impression that they cannot arrest the progress of disease, or effect its cure?

I confess that I do not share in the general opinion that it is of no use sending for the veterinary surgeon. In the matter of diseased cattle I consider them to be the natural guardians, and the most proper persons to be consulted; and I have no doubt that were they only to bestir themselves, and wipe out the reproach which has in some measure attached to the profession for having neglected so important a part of their duties, they would soon confer

upon the owners of stock, and the community at large, an immense amount of good, and regain the confidence of the stockowners. Let them do it. I must express my surprise that some have put them forward as the most proper persons to undertake the duties of inspectors of meat. I can only say, that so far as my knowledge of the profession goes, before they can successfully compete with experienced butchers, they have a great deal to learn. What is wanted for a proper discharge of the duties of meat inspector, is not only a knowledge of the diseases which affect cattle, but the knowledge also of the *effects* of *disease* upon *the carcass;* and that can only be learned in the slaughter-house. In conclusion, I may add, that this subject of cattle disease, and the effect of consuming diseased meat, is one which the members of your society would do well to give their most serious and anxious consideration to; and if this be carried out with that zeal, prudence, and enlightened judgment which the subject demands, lasting and solid benefits will result to the community.

I remain, Sir,

Yours respectfully,

JAMES HIGGINS.

BOROUGH OF LEEDS.—DISEASED MEAT.

Detailed account of the number of Diseased Cattle, and Carcasses brought into this Borough for examination for the four years ending December 31*st*, 1864, *and the results of such examination, viz.*—

1861.	Examined.	Passed.	Condemned and destroyed.
Beasts . . .	506	368	138
Calves . . .	107	6	101
Sheep . . .	146	88	58
Pigs	39	31	8
	798	493	305
1862.			
Beasts . . .	704	544	160
Calves . . .	117	2	115
Sheep . . .	163	79	84
Pigs	71	48	23
	1055	673	382
1863.			
Beasts . . .	737	543	194
Calves . . .	150	—	150
Sheep . . .	353	149	204
Pigs	138	88	50
	1378	780	598

1864.	Examined.	Passed.	Condemned and destroyed.
Beasts . . .	787	574	213
Calves . . .	99	—	99
Sheep . . .	367	199	168
Pigs	161	92	69
Total .	1414	865	549

BOROUGH OF LEEDS.—DISEASED MEAT INSPECTION.

Number of Beasts affected with "Pleuro-Pneumonia," which have been brought to the various slaughter-houses of the Borough, and inspected by me, previous to their being offered for sale as human food, for the years 1863 *and* 1864, *viz.*—

	1863.	1864.
January	33	23
February . . .	24	28
March	26	22
April	21	28
May	53	23
June	64	37
July	56	51
August	60	32
September . . .	53	27
October	28	18
November . . .	28	23
December . . .	31	35
	477	347
Decrease 130.		

Yours respectfully,
JAMES HIGGINS,
Meat Inspector.

To E. C. DRAY, Esq., *Jan. 6th*, 1864.

I am sure you will coincide with me in opinion, that this association is much indebted to Mr. Higgins for his report, which I trust will have the effect of stimulating us to further exertions on the subjects mentioned. I have again been requested by two or three members of this Society, to urge upon our professional brethren the advisability of more uniform charges. I am quite aware this is a delicate subject, but in my opinion a very important one, and certainly merits our attention.

And now in closing this imperfect address, which I fear has been too long, as well as uninteresting to you, I think I may with some measure of confidence say, that in what we have already done there is something more than signs of life; there are ample proofs of healthy function, and high organisation of thought and onward

progress. May this increase yet more and more, until every county in this happy isle has its Veterinary Medical Association. The present time is not one for sleep, or folding of the hands in ease; but rather we must be up and doing, for although much has been done, much remains yet to be done, and to accomplish this we must become a firmly united body, presenting to those who would oppose and cavil at our efforts, a moral front more imposing than that of a Roman phalanx, and against which all the assaults of our enemies will prove powerless and in vain. I am afraid I have wearied you with these remarks, but in your criticism of them—

"Be to my faults a little blind,
And to my merits very kind."

Professor Spooner, in proposing the vote of thanks to the President for his address, stated that he was fully rewarded for his journey north, by the ability of the address he had just listened to, and most proud to meet so many anxious to exalt and elevate their profession. Mr. McTaggart seconded the vote, which was carried with applause. After returning thanks, the President called upon the Hon. Sec. to read his paper on Counter-irritation.* Upon the conclusion of the reading of it, Professor Spooner suggested that as the subject was of importance, and the time but limited, the discussion should be postponed, which was done accordingly, to the next meeting of the Society at Wakefield, in April next.

The gentlemen present now adjourned to the banqueting-room, where a most sumptuous dinner was served by Mr. Lofton, to whom the thanks of the Society are due.

The following toasts were then proposed by the President:

"The Queen," "The Prince and Princess of Wales," and other members of the royal family.

"The Army," "Navy," and "Volunteers," responded to by *Mr. Cartledge.*

"The President of the Royal College of Veterinary Surgeons," responded to by *Mr Hunt.*

"The Professors and Colleges," proposed by the Vice-President, *Mr. McTaggart*, and responded to by *Professor Spooner.*

"The Examiners," responded to by *Mr Lawson.*

"The Yorkshire Veterinary Medical Society," was proposed by *Mr. Greaves*, who said: The next toast on the list is "The Yorkshire Veterinary Medical Society." It has been called the toast of the evening, and the honour of proposing it has been confided to me. In the first place I must congratulate you on the evident success of your Society, which is in no small degree attributable to the judicious direction of your worthy President, and the indefatigable exertions of your much respected Secretary. The deep interest which has been awakened in the veterinary profession in Yorkshire has been in some degree promoted by the interest existing in the profession in other parts of England, and which movement has not been confined to the rank and file in the provinces; for

* This essay will appear in our next number.

we have been honoured by the presence of the President of the Royal College of Veterinary Surgeons on two former occasions, also by two of the professors of the London Veterinary College and the professor of the new Veterinary College, Edinburgh. For such honour I am sure that each association unanimously tenders to all those gentlemen their warmest thanks. But it remained for this society to receive the double honour of the presence of the President of the Royal College of Veterinary Surgeons and the Principal of the Royal Veterinary College. I believe there are no two men living who could confer so much honour upon us as the two gentlemen now in our midst. It is this kind of acknowledgment and encouragement which these associations feel the want of in order to give increased dignity and importance to their movements. This is the seventh time that I have been identified with and advocated the cause of Provincial Veterinary Medical Associations at seven different public meetings of veterinary surgeons during the last twelve months. When, too, we see our own worthy professor leave his important duties and travel 300 or 400 miles to give us his great authority and sanction, it affords another proof of his devotedness to our profession, and is a great encouragement to this movement. For such kindness he deserves our warmest and lasting gratitude. Some one, perhaps, may ask me what is the nature, object, and duties of these associations? I answer, "Any and every question that affects, or is likely to affect, the well-being of our profession is a fit and proper question for these associations to take into their serious consideration, and freely to discuss." There are two prominent questions which present themselves to my mind at this moment as being specially worthy of their consideration, and calling for their earnest attention. These I will just glance at. One is the question of the soundness of horses, in the definition of which some of our most eminent men both oppose and stultify each other in our courts of law, thus bringing down upon our profession ridicule and humiliation. The natural results of associating freely and frequently together, interchanging ideas and canvassing each other's views, must dissipate all flimsy and crochety notions which we may unconsciously harbour. Our mind is imperceptibly schooled into a healthier tone of opinion; hence sound views and right principles must be engendered, and a repetition of those deplorable results will rarely occur. The second question I wish to allude to is the unfortunate disunion and dissension which exists between our principal colleges, which I have characterised elsewhere as operating like a millstone around the neck of our profession. It is high time this abnormal state of things should cease to exist. It is not for a moment to be contemplated that these associations shall ever in the remotest degree trench upon the privileges or authority of the council or the colleges; but when I look upon the rapid advancement they are making, the public opinion which is elicited, and the practical results already developed, it would be a false delicacy on my part if I omitted to observe that they will operate as so many great centres of attrac-

tion, and gather around them a power which will become greater and greater, and will be felt and fraternised with by all those who now occupy head-quarters; and by this means an impression may be made and a momentum given both to council and colleges. Nothing can be more true than that a house divided against itself cannot stand. If a wise tactician be required to sketch a plan whereby a reconciliation may be effected, I hope it is not too much to ask that some of our zealous members may feel it to be their bounden duty to make the effort, and to prove that union makes might. I hope before I quit the arena of toil to behold the Highland and Agricultural Society of Scotland, with the Edinburgh Veterinary College on the one hand, and the Royal College of Veterinary Surgeons in conjunction with this and kindred associations on the other hand, all cordially united together, and marching onward shoulder to shoulder, thus removing every difficulty that may impede our progress. By this means we shall raise higher and still higher the character and usefulness of our noble profession; and at the same time wise and comprehensive plans for internal improvement will be made. With these remarks I beg to propose the success of the Yorkshire Veterinary Medical Society, coupling with it the name of our very worthy and indefatigable Honorary Secretary, Mr. Williams.

Mr. Williams in reply, after thanking Mr. Greaves for his kindness to the Society from its commencement, and congratulating the members on its success, went on to say: Mr. Greaves alluded in his speech to the dissension in the profession caused on the one hand by the Veterinary College of Edinburgh, and on the other by the Royal College of Veterinary Surgeons. I stand here as an Edinburgh man, possessing no other qualification than an Edinburgh diploma; I therefore feel deeply interested in the question. It is a question of the utmost importance, and requires to be dealt with carefully, cautiously, and delicately, so that offence be given to none upon the question. Many are indifferent to it; others know nothing about it; and again, others are prejudiced to a great extent. However, most who are present are aware that the Edinburgh diploma has been granted since the year 1825, and gentlemen possessing it recognised as veterinary surgeons, not only by the public but by the British Government also, for nearly twenty years, or up to 1844. This diploma and that granted by the Royal Veterinary College of London were on an equality; but in that year the charter of incorporation was obtained, and to that measure Professor Dick was a consenting party under certain conditions; and one of those was that the examination fee should not exceed a certain amount. Well, after the obtaining the charter, a Council was appointed to carry it out; and for a year or two things went on pretty well. But after a time the Council thought proper to break through its agreement with Professor Dick—always the friend of the deserving youth struggling to advance himself—by raising the examination fee, by snubbing his students, and by excluding those who had studied under him from the honour of sitting

at its board; and, until very lately, no Edinburgh man was a member of the Council of the Royal College of Veterinary Surgeons. At these proceedings Professor Dick was naturally indignant and fell back upon his original and recognised method of granting the diploma of the Highland Agricultural Society of Scotland, which practice he pursues to this day. I hold one of these diplomas, and both professionally, and as far as my practice is concerned, I require no other. My diploma has been recognised in every court of law at which I have yet attended; and proudly do I say that this Society has thought it wise and prudent to admit its holders into all the privileges of membership. But there are some persons who cavil at this and hold themselves aloof from us on this account. To these I would say: you go the wrong way to work if you know anything of the question, but I doubt if you do, and, being ignorant, your duty to the profession that you profess to love so much, and the welfare of which you say you have so much at heart, would be to make yourself acquainted with it, and to work amicably with those who do understand it and who are as desirous as you are to see the problem solved. Gentlemen, this is the knot which we have to unravel; and there is not an Edinburgh man present who is not desirous of seeing it done. How this may be best effected, and thus for ever to set the question at rest, deserves, I think, the immediate consideration of the different veterinary societies. But allow me to throw out a hint here. Whatever arrangement may be proposed the interest must not be one-sided. I believe it is a maxim in law that no contract is binding unless both the covenanting parties are consenting thereunto. Therefore, let the Royal College of Veterinary Surgeons remember that in dealing with this matter, and making propositions tending to its amicable arrangement, they must concede to us who, really, as far as our practice, social standing, &c., are concerned, require no other qualification than what we possess, an equivalent to whatever we may agree to concede to them. I am not so bigoted as not to see, and likewise to acknowledge, that this matter calls for our most earnest and immediate attention; further. that until it is satisfactorily arranged our profession will not attain that high standing to which it is entitled. Not that *we* detract from its status, as some would fain believe. This I will not for a moment allow; but that being divided as a profession we cannot bring to bear that amount of weight upon a question which involves the welfare of the body in general. In conclusion, my mind travels onward to the bright future; and what do I see? If both parties only take the matter in hand as they ought, a great and noble profession united together by a bond of union—which is strength—under one banner, upon which is written Progress; and at the head of this noble band methinks I see that venerable man, the father of the Scotch branch of this gathering, and chief of a united profession, Professor Dick, President of the Royal College of Veterinary Surgeons.

Mr. Naylor proposed "The Lancashire, North of England, and

Liverpool Veterinary Medical Association;" which was responded to by *Messrs. P. Taylor* and *Hunting*. The latter gentleman spoke nearly as follows:

Mr. President, Vice-Presidents, and Gentlemen.—After the very able and eloquent manner in which the President of the Lancashire Veterinary Medical Association has returned thanks for the kind and enthusiastic way in which you received the toast of "Success to the Provincial Veterinary Medical Associations," I feel that it would be superfluous for me to say more than has been said except to thank you most sincerely for the honour done me, and the association which I have the honour to represent. With these remarks I should have felt it my duty not to occupy your time further had it not been for some observations which fell from Professor Spooner and your Hon. Secretary, those especially alluding to Professor Dick's past and present position, and his conduct towards our profession. My friend, Mr. Williams, must know perfectly well that there is a wide, noble front door as the legitimate entrance to our profession; unfortunately there is also a back door, and many there are who have come in thereat. I am, however, pleased to state that I have never conversed with a single individual who holds only the Highland certificate who has not admitted that he was either misled by others, or had made a great mistake, and had he known *then* what he knows *now*, he would never have taken it; and I am pleased to say that two, if not three, of such men purpose taking the only legitimate diploma, viz., that of the "Royal College of Veterinary Surgeons," at the forthcoming examination; not because they are our inferiors in a professional point of view, but because they are desirous of becoming one of us, that we may be what we ought always to have been, and for what our charter was obtained, one undivided body. We of the corporate body reciprocate their honorable feelings, and are anxious that we may have the long desired pleasure of receiving them, not two or three only, but all, into the veterinary profession through that honorable, grand entrance, the diplomatised door of the corporate body. And I know of no means so likely to lead to this desirable result as the establishment of veterinary medical associations, where the opportunity is given us of discussing in a sociable way our little differences, reasoning upon them in a friendly and manly spirit, holding fast to the good, and discarding the evil. I hold that such associations as I have now the honour to address are well calculated to remove those numerous little asperities which grow out in such ugly shapes upon our characters, especially when we are isolated as it were from personal contact with those of our own standing. We are then too apt to forget that our neighbours have interests and feelings as well as ourselves, which we are in common honesty bound to consult, and which we shall be all the more anxious to do when we know them personally, by meeting them as professional brethren on such occasions as the present. I cannot forbear relating to you one instance of this which occurred in our

own society. One of the members *thought* he had been injured professionally by a brother member, and, therefore, would not attend our meeting; his absence was noticed, and the reason of it inquired into, when it was ascertained there was no reason whatever for our friend absenting himself. An explanation took place through a third party, and from that moment these members have been on the best of terms, and I doubt not would put themselves to considerable inconvenience to serve each other. This, then, is one of the many advantages derived from such associations; for without them these men in all probability would have been professional enemies for life.

What we want is to make these associations of some practical use to us as a profession. We can only do this by making ourselves better men. Don't let us be led away by shadows. You hear some men talking perpetually about Acts of Parliament to prevent veterinary surgeons serving on juries, or fulfilling parochial offices, and I cannot tell what besides—I believe some say to make us gentlemen, and give us a status in society. These things are all very well in their way, and may at some future time be claimed as our just rights; but they are now only shadows. You may depend upon this, that the station we hold in society will always depend infinitely more upon our individual conduct than upon any privileges Parliament may grant us. Parliament never yet passed a law that made men of any profession gentlemen; nor will it do so for us. What we want above all other things is to be true and honest to ourselves, to each other, and the public. This, I fear, we are not at present. I can tell you, gentlemen, that the manner in which young men are turned out of our colleges is often disgraceful to us as a profession and ruinous to themselves. Young men from the anvil, from the draper's counter, from the tailor's board, from the lawyer's office, or the engineer's shop, are alike admitted into our schools, many of whom know no more about a horse, ox, sheep, dog, or pig, than he does about an hippopotamus. For the first session he studies anatomy, physiology, chemistry, and "looks" into pathology; in the summer he may work at chemistry, read physiology, but has no practice, and goes back again the next session to pass through the same curriculum, to which he adds, "reading up" his pathology to get the diploma, which tells the public he is thoroughly competent to practise the veterinary art; and the chances are the man believes it himself, and goes into the country to practise on his own account. He is called in by some clever common-sense client as a "college man" to treat some bad case; he attends, and finds, to his great embarrassment, very obscure symptoms, symptoms which he knows nothing about, nor even the organs affected, nor the medicaments proper to arrest the disease. Or it may be a difficult case of parturition, the first he has ever seen, and after letting pass the opportunity for delivering the animal safely, he gives up the case in despair. Another person is called in, *not* a "college man," who delivers the patient in a few minutes. Is this the way for members of our profession to obtain the confi-

dence and respect of the public? No. Is it the way to make good men in the profession? No; the chances are the clients are disgusted with the counterfeit, and the young men are after months, or it may be years, compelled to leave the locality because their professional reputation has been destroyed. The confidence of the public is lost in many a so-called qualified practitioner, and ten years of the man's life are wasted in struggling to obtain that which he ought to have known before gaining his diploma, and which he could have obtained in one or two years with a competent veterinary surgeon, viz., a practical knowledge of pathology. I say that it is a gross imposition on the public to permit young men to commence the practice of veterinary medicine who have not been at least two years with a practitioner before taking their diploma. I am not an advocate for the apprenticeship clause, nor for a strict preliminary examination before entering the colleges as we are at present constituted, but only because the latter is not at present practicable. But the examination for the diploma ought to be infinitely more searching than it is, so as to prevent, in some measure, incompetent members from disgracing the profession.

Having been asked what I would do to remedy this great evil, I am bound to confess that I cannot but see great difficulties to overcome, for unless the schools go hand in hand with the corporate body little good can result from any alterations we could make. As we are at present situated I consider the best plan is to give a young man, when leaving school, a year with a practitioner, then a session at college, followed by the next summer and winter in practice, when he would be well fitted to attend his last session, and understand his subjects infinitely better then he could otherwise possibly do.

Mr. Carter proposed "Our Honoured Guests;" responded to by *Mr. Newstead*, surgeon.

Mr. Hunt proposed the health of the President.

Mr. J. Smith proposed "The Ladies;" responded to by *Mr. Naylor*.

We regret that the speeches of Mr. Hunt, Professor Spooner, and others are unfortunately lost to the profession through the shorthand writer present not having taken notes of them. Professor Spooner's remarks were characterised by a liberality of sentiment and expressions of such goodwill to all present, and particularly to Professor Dick, who was absent, as to command the heartfelt thanks of all, and especially the old Clyde Street College students.

W. Williams, *Hon. Sec.*

NORTH OF ENGLAND VETERINARY MEDICAL ASSOCIATION.

The annual general meeting of this association was held on Friday, January 20th, at the Crown and Thistle Hotel, Newcastle-on-Tyne.

A considerable number of members were present on the occasion.

Mr. C. Hunting, president of the society, occupied the chair.

The secretary's report showed a satisfactory state of the society, financial and otherwise, and was unanimously adopted on the proposition of Mr. W. S. Moore, seconded by Mr. J. Fairbairn.

Mr. J. Womack Ponteland, Newcastle; and Mr. R. Hall, Stockton-on-Tees, were admitted members.

The following gentlemen were chosen to fill the various offices during the present year:

President.—Mr. C. Hunting (re-elected).

Vice-Presidents.—Mr. J. Fairbarn, Alnwick; and Mr. G. Farrow, Durham.

Council.—Mr. H. Hunter, Newcastle (re-elected); Mr. Thos. Thompson, Sunderland; L. Scott, Hetton-le-Hole (re-elected); W. S. Moore, Gateshead; Dr. M'Gregor, Seaton, Delavel; John Hutchinson, South Shields (re-elected).

Treasurer.—Mr. D. Dudgeon, Sunderland (re-elected).

Hon. Sec.—Mr. G. Armatage, Pensher (re-elected).

On the motion of the secretary, seconded by the president, and carried unanimously, "It was resolved in future to hold the quarterly meetings of the society at Newcastle, alternately with Durham, or other towns in the counties of Durham or Northumberland, as may be decided by a majority of members at the previous meeting."

In accordance therefore with this arrangement, the next meeting will be held at Durham during the month of April.

On the conclusion of the business proceedings, the honorary secretary read a paper on "Influenza," which gave rise to an extended and profitable discussion, remarkable for the spirit of inquiry, and desire to impart the fullest information on a subject of such importance; in it most present took part.

Mr. Dudgeon and Mr. Farrow drew the attention of the meeting to some interesting cases which had recently fallen under their observation; that by the former gentleman was illustrated by the first rib of a horse fractured obliquely across the middle from a fall after a false step with a load on the highway; the latter produced about two pounds of the spray of rifle bullets that had been taken into the stomach of a cow, which with others had died from their effects, such having been picked up by the animals when grazing on land used for rifle practice.

The members and their friends afterwards dined together, the duties of the chair being efficiently performed by the president, Mr. Hunting, and those of the vice devolving upon the secretary.

The president proposed "The Queen;" "Prince and Princess of Wales, and the rest of the Royal Family;" "Army and Navy, and Rifle Volunteers," responded to by Mr. Hutchinson; and "The North of England Veterinary Medical Association."

Mr. Stephenson proposed "The Royal College of Veterinary Surgeons;" followed by "The Visitors;" "Kindred Institutions, Metropolitan and Provincial;" "The President;" "Veterinary Schools;" "Vice Presidents;" "Council;" "Authors of the various Papers;" "Treasurer;" "Honorary Secretary;" "The Ladies;" and the meeting, highly satisfactory to all parties who had entered into the proceedings with good spirit, terminated by the president proposing the last toast, "To our next Merry Meeting."

LIVERPOOL VETERINARY MEDICAL ASSOCIATION.

OFFICIAL REPORT.

The above association held their usual quarterly meeting in the Medical Institution, Hope-street, on the evening of Friday, 10th February. Present:—Messrs. B. Briscoe, E. A. Friend, J. Simpson, sen., G. Hayes, W. A. Wilson, J. Bryden, R. Chambers, Thomas Harwood, and J. Leather, Liverpool; P. Taylor, President of the Lancashire Association. Thomas Greaves, J. Lawson, C. Simpson, Thomas Taylor and W. Hayeock, Manchester; J. Halfey, Southport, and William Dobie, Birkenhead; and the Secretary.

Mr. Briscoe, in the unavoidable absence of the President, in the chair. After the usual preliminary business *Mr. Brydon* read a short paper on Laminitis, in which he stated that in his opinion the remote cause was derangement of the digestive organs. The most common exciting causes were over-exertion, eating raw wheat, or drinking too much cold water when the animals were over-heated. He did not believe in horses having an hereditary tendency to laminitis.

In the treatment of this disease he would remove the shoes, lower the crust, bleed at the toe, give a dose of laxative medicine, throw the animal down and apply warm poultices to the feet. If no better in a few days, he would repeat the bleeding, change the warm for cold poultices, and give sedatives.

Mr. J. Simpson agreed with the essayist that this disease arose principally from derangement of the digestive organs, but depreeated bleeding either at the toe or neck. He would pare the soles till the blood began to ooze through the pores thereof, and apply cold poultices from the first.

Mr. Friend would not remove the shoes, would not bleed, neither would he throw the animal down. He would give a laxative, and keep the feet wet with cold water. He had always found the most difficulty in treating those cases in which the shoes had been removed before he was called in.

Mr. Wilson would remove the shoes, lower the crust, bleed and apply cold poultices, but would not thin the sole. He considered laminitis to be attributable in many instances to bad shoeing, and the reason why this disease was so seldom seen in Liverpool was the excellent manner in which horses were shod.

Mr. Greaves said there could not be two opinions about the importance of the subject under discussion, however much they might differ as to its true nature, causes, and treatment. He had for many years made it his study, and some twelve or fourteen years ago he published his views on the subject in the pages of the *Veterinarian*, and as they were all aware, he had lately been doing the same in a series of letters to Mr. Williams. His views differed from the essayist. He believed that some horses had an hereditary tendency to that disease. He did not believe it to be purely an inflammatory disease, but to partake more of the nature of cramp, or some spasmodic action of the nerves of the foot. The colleges differed in their opinion on this subject. In London it was said to be rheumatism; its nature in Edinburgh to be inflammatory. But if it were true inflammation we should have sloughing of the hoofs in a great many cases, whereas this is only a very rare occurrence. He added, As I have already stated I believe it to be of a spasmodic nature, and that you will generally find the duration of the attack to bear an inverse ratio to its acuteness. Thus what is termed acute laminitis runs its course in a few days, but when it assumes the subacute form it comes gradually and stealthily on and often sets all treatment at defiance for months together. He had once a case of this sort on which he tried all modes of treatment for thirteen months. At last, by way of experiment, he performed neurotomy; but in less than a week both hoofs came off. He considered great benefit to be derived from throwing the animal down, or putting him in slings. Bleeding at the toe he considered desirable in many instances, though he had often found that those patients that were bled the most had done the worst.

Mr. Lawson said his opinion was that laminitis arose principally from derangement of the digestive organs, and although the views of his friend Mr. Greaves were entitled to every respect, as whatever he said and whatever he did was said and done after due consideration and with a sincere desire for the good of veterinary science and the veterinary profession, he, nevertheless, must dissent from those views, for he felt that his thirty years' experience and observation, in which he had seen a great many cases, could lead him to no other conclusion than that it was primarily a disease of the digestive organs, and inflammatory in its nature. He had tried various modes of treatment, but he considered that he had most success by

opening the bowels well, avoiding super-purgation, the evil effects of which he had seen in many instances. He would remove the shoes and lower the crust, but would not thin the soles, lay the animal down, an operation simple in its nature but one which afforded great relief, and for which he had been often rewarded by an immediate remission of pain and look of gratitude on the countenance of the suffering patient. He would bleed at toe, and ridiculed the idea of a suppurating wound following, attributing such a result to the inefficiency of the operator. He would apply cold poultices to the feet and give small doses of aconite. He also said that Mr. Broad of Bath, whom he characterised as a shrewd and scientific practitioner, removed the shoes, paired the feet quite thin at the heels, and kept the animal walking a certain distance every day with the best results.

Mr. P. Taylor considered it a slur on the veterinary profession that a disease of such importance as the one under discussion should not have been thoroughly investigated and brought under some uniform rules of treatment before this time. We were now, he said, in the middle of the nineteenth century, and each seemed to have his own ideas of its nature, and each held his own mode of treatment, but he hoped that better days had dawned for the profession, and that each and every member of these associations would exert himself to find out the true nature of this and other formidable diseases by which means alone we could have them more under control, and apply ourselves to their treatment with a greater certainty of success. He would remove the shoes, apply poultices, and give small doses of aconite; but he disapproved entirely of bleeding at the toe. He considered that he could perform the operation as skilfully as any one, but still he found that it did more harm than good.

Mr. Haycock regretted the want of unanimity of opinion on this question as to its nature. He thought Mr. Greaves had got on the wrong track, and that what he was watching and investigating would turn out to be a different disease altogether. He considered laminitis inflammatory, and caused by a derangement of the digestive system, and in his opinion nothing would cause it sooner than raw wheat. Raw wheat was a poison to horses; but it was a somewhat strange fact, nevertheless he believed it to be a fact that, when it was boiled, horses fattened on it sooner than upon anything else, and it was often used by horse dealers to get thin horses into marketable condition. He thought much good might be done by these societies in obtaining some statistics of the various diseases. Not that the statistics would prove anything, but if we had a certain number of cases treated on one principle, and an equal number treated on another, we should then be able to judge which was the most successful.

The following gentlemen also took part in the discussion:—Mr. Hayes, Mr. T. Taylor, Mr. Halfey, Mr. C. Simpson, and Mr. Dobie.

Mr. Briscoe then summed up the evening's discussion in a few

lucid remarks, after which the usual vote of thanks being passed the meeting terminated.

The Secretary then intimated that the next paper would be read by Mr. Friend on the "Legal Responsibilities of Veterinary Surgeons," and that he would feel obliged if friends having decisions on the point would transmit them to him so as to make the paper as complete as possible.

GEORGE MORGAN,
Hon. Sec.

Veterinary Jurisprudence.

CIRENCESTER COUNTY COURT.

(*Before* J. FRANCILLON, Esq., Judge.)

ALLEGED MALPRACTICE, AND NEGLECT OF PROPER MANAGEMENT OF A HORSE.

WILLIAM HENRY MOGG *v.* THE ROYAL AGRICULTURAL COLLEGE, CIRENCESTER.

IMPORTANT CASE.

(*Continued from* p. 143.)

AT the Court held November 30th, Mr. Edlin., instructed by Messrs. Bevir and Ellett, again appeared for the plaintiff; and Mr. Milward, instructed by Messrs. Lawrence, for the defendants.

Mr. Milward opened the case on behalf of the defendants. He expressed surprise that the College should, under the circumstances, have been sued. If anybody was liable it was Mr. Murray, and that gentleman was perfectly well able to defend himself from the aspersions made against him. His Honour had, however, decided that the action was rightly brought against the College, and he bowed to the learned Judge's ruling, but at the same time he could not help thinking that there was a little something behind—that the plaintiff had a reason for making the College the defendants. The plaintiff was in hopes that the College would compromise the matter, rather than allow the case to be brought into court—he was putting the screw upon them, and hoped to get something out of them However, he (Mr. Milward) thought that the plaintiff would be disappointed. Mr. Milward narrated the circumstances of the case, and said that Mr. Murray had studied under Professor Gamgee, of Edinburgh, and was recommended by that gentleman to the Council of the Royal Agricultural College. From a large number of applicants, Mr. Murray had been selected to fill the chair of veterinary science, and he was thoroughly well qualified for the

position. The plaintiff's horse had been properly cared for, and properly treated at the College, and he (Mr. Milward) was persuaded that Mr. Murray, who, after all, was the real defendant, would come out of this trial with credit, and that his Honour would be satisfied that neither the College nor Mr. Murray was to blame. Mr. Milward concluded by calling the following witnesses.

Mr. Edmund Ruck deposed—I live at Castle Hill, Down Ampney. I keep hunters, and hunt with the Vale of White Horse Hounds in this neighbourhood. I have often availed myself of Mr. Murray's services. I have employed him as a veterinary surgeon. He has treated horses for me for lameness. (The question as to whether Mr. Ruck was satisfied with Mr. Murray's treatment was objected to.) I keep a large stock of cattle and horses, and farm very extensively. I have 1300 acres of land. I know the horse that is the subject of this action. I saw it hunting last season. Mr. Mogg was riding it. I remember seeing Mr. Mogg on this horse at Aldsworth. Mr. Mogg's horse had run away with him through the village, and greatly frightened the women and children who were looking out. The plaintiff afterwards made a remark to me that the people were more frightened than he was. This was the second time he had run away with him. He remarked that a cunning farmer who stopped the horse when he was running away wished to buy it, and offered £15 for it. Mr. Mogg said, had he bid him £25, he should have sold it. The horse was of a very peculiar disposition. He was irritable in the field, and not safe to ride, except by people who were capable of riding anything. £25 was a fair price.

Cross-examined.—I know it is the same horse by its peculiar tail. It was a bay horse with black legs and a peculiar tail. The prices of horses vary according to circumstances. I might have given £25 for a horse before now, and sold it again for near £100.

Re-examined.—If I had given £25 for this horse, I should not have got any profit out of him.

Mr. Alexander James Murray was then called by Mr. Milward. He deposed—I am a member of the Royal College of Veterinary Surgeons. I was appointed professor of veterinary surgery at the Royal Agricultural College, at the beginning of 1863. I was to give two courses of lectures in the year at the College as part of my duties. I receive an annual salary, and board and lodging at the College. I also practice as a veterinary surgeon on my own account with the sanction of the Council of the College. They allow me the use of a hospital. I have attended Mr. Ruck's horses, and four or five of Mr. Montgomery's horses. That gentleman keeps a good stud. I receive fees for attending horses not belonging to the College, and those fees belong to me. I have attended horses, cattle, and sheep for Mr. Lawrence; and I am employed a good deal in the neighbourhood. On the 12th of May last I was in attendance on a horse of Mr. Montgomery's, at his stables, at Cirencester. While so attending, Mr. Mogg came into the yard. Mr. Montgomery introduced him to me. Mr. Mogg told me that he had a

horse that he thought of bringing up to the hospital. He asked what our terms were. I told him the charge for the keep was 10*s.* a week, and treatment additional. Mr. Mogg said he should call at the hospital next day, and see me with reference to the horse. I met him the next day at the hospital, at eleven. He looked over the hospital, and selected a box where the horse was to be put. He said the terms I had mentioned were too high. He wanted me to take the horse for 6*s.* a week, and give him hay and oats, and treatment inclusive. He said that a gentleman near London, a veterinary surgeon, had kept a horse for 6*s.* a week on former occasions. He said that the principle upon which business was now conducted was small profits and quick returns. I told him that if I took the horse at that price there would be no profits. I eventually agreed to take him for 7*s.* a week for keep, and 2*s.* for treatment. That was to be without oats. He said if I did not take the horse at that price, he would take it to Mr. Dowe's, where he could get him kept for 8*s.* a week. I had only one or two horses in the stable at the time. I was rather anxious to have a few patients. Up to this time I had not seen the horse. I asked him the nature of the lameness, and he said that he did not know, but that one morning on going to his stable, about a fortnight before, he found him lame. He said it was a trivial case, which hardly required any treatment. He told me nothing about the horse having been lame before. He requested me to send for the horse. I sent Allen, the groom. I was at the hospital when it arrived. I examined the horse, and found that the sheath of the flexor tendons was thickened, and the horse was excessively lame. I did not expect to find him so bad. He was placed in the box which Mr. Mogg selected, because it could go out into the yard during the day. Mr. Mogg drew my attention to some loose stones. In consequence of that I had the stones removed that day. I applied wet bandages to the leg, and kept straw under him during the day, as he was in such pain that he wished to lie down. I kept on the treatment for three or four weeks. That was the proper treatment for a horse with a strain. It would not have done to blister the horse then. Strains or sprains are very common occurrences. I saw the horse every day. The letter which I wrote on the 23rd of May was in consequence of a letter which I received from Mr. Mogg. In that letter I said that I was applying bandages wetted with lotion; that I found the malady more serious than I had expected from his statement; that the sheath of the flexor tendons was thickened and distended; that he was very lame on coming to the hospital, and appeared to be in great pain; that the lameness was diminishing greatly, and that the pain was now comparatively slight; that I should continue the same treatment for a week or ten days longer, and then I should apply a blister; and in a couple of months I hoped the horse would be fit for work again. I continued the treatment some days longer than I mentioned. These lotions and bandages were applied with a view to remove inflammation. I afterwards applied blister ointment, but not in sufficient quantity to induce a discharge, or remove

the hair. I did not have the hair removed, but I applied something of a stimulating nature. That was the treatment I considered proper. The horse was improving slowly. I think the horse would have been fit for work in two months. After the groom told me something, I found the horse worse. I examined the horse, and found an abrasion on the point of the near hock, and the hair had been rubbed off the hip. If a horse had rolled against a wall, these marks might have been caused. I did not tell Mr. Mogg that the horse had slipped up. I told him that the horse had been cast, and explained to him minutely how it had occurred. I told him that while rolling on the ground, the horse had rolled up against the wall; that he had got so close to it, that his legs were doubled in between himself and the wall; that, in struggling to free himself, he had injured the lame leg, and had produced those abrasions. I told him that the horse had been improving, but that since the accident he had relapsed. Mr. Mogg said the horse had been starved. He pointed to the abrasion on the hock, and said, "There's a sore from poor feeding." He pointed to the tail, and said it was disappearing from the mange. The horse had not got the mange. It was rather a short tail—shorter than horses usually have; it had been shortened some way or other. The hair on the upper part of the tail was much shortened, owing to the horse rubbing against the sides of the box. Horses lying loose very frequently rub their tails; it is no detriment to the horse in the least. When he complained to me of the horse being starved, I told him that the horse had been fed on grass and hay, as agreed upon. I told him it was good hay, and just the same as other horses had in the hospital. Mr. Mogg was the first who ever complained of the treatment or keep of the horses. I did not tell Mr. Mogg that the treatment was as good as the College could afford for the money. I did not speak of the College at the time. There was no stint, the horse had as much food as he could eat. There were no sores on the horse, only the few abrasions which I have mentioned. Mr. Mogg was rather excited, and gesticulated a great deal. He said, "The college may keep the horse now, and it may be shot for all I care, and I will be paid for it." He also said if the college did not pay for it, he would take it into court, and publish it all over the county. I said it was his matter, and he could do as he pleased. I said, if you are not pleased with the treatment of the horse, you can take it away. When I first began treating the horse, I put straw under him, but when he was improving I had it removed during the day, and laid down again at night. I consider this proper treatment. Mr. Mogg asked me who were the directors of the college, for he must write to them about it. I afterwards heard that he had written; and in consequence, on the 6th of July, I wrote to him, and requested him to remove the horse, and settle the account. I was asked to write that letter. He came in about a fortnight afterwards, with his groom. I made out the account produced, amounting to £4 1s. He objected to the items for removing the shoes and putting them on again. That was 1s. each time. He paid it under protest. I did not at all blister the

horse. I applied blistering ointment, after the inflammation had subsided. Supposing the horse to have been properly tended while in Mr. Mogg's possession, and kept in condition as a hunter, up to within a fortnight of its coming to me, and then put in the loose box at the hospital, with an open yard and change of food, it would rather make its condition worse. Lameness and pain affect the condition of a horse very much. A week or two's pain would have a very great effect upon the condition of a horse, for the worse, and make him look more emaciated. If I had known that the horse had been lame with the same leg five or six months before, I should not have written the letter so confidently as I did on the 23rd of May. At the interview with Mr. Mogg, in June, he told me that it had been lame before, and he had cured it himself in five weeks. I understood him to say he was lame with the same leg.

Cross-examined.—What I have just been asked about was told me in June. I knew before that that he was previously lame. If I had known on the 23rd May that the horse had been lame before, I should not have expressed the opinion I did, certainly not. Mr. Mogg's letter on the 21st May told me that he had cured the horse before in five weeks. I reconcile these apparently contradictory statements in this way. At the time I wrote the letter of the 23rd May, I had had only Mr. Mogg's history of the case. I had had his letter of the 21st May. (The letter of the 21st May was read by Mr. Edlin.) I have stated that I should not have written so confident a letter, had I known that the horse had been lame before. Mr. Mogg's letter told me that it had been lame before. My letter was an answer to this letter. I had not had an accurate account of the previous lameness. If I had been told that it had been lame in the same leg, I should not have been so confident. I inferred from Mr. Mogg's letter that the lameness was in the same leg. I did not understand that the lameness was so great. I was told that it was a trivial lameness. I refer to the second lameness. Mr. Mogg did not speak of the previous lameness when he gave me this horse to take care of. Mr. Mogg's letter of the 21st May, spoke of "the former occasion of its becoming lame," as if I was aware of it. When I received the letter, that was the first intimation I had of its previous lameness. I had then had the horse in my care about ten days. The horse reached me on the 13th May, and I received that letter on the 22nd. I wrote in reply on the 23rd. Having inferred from Mr. Mogg's letter that the horse was previously lame in the same leg, that would have induced me to express a less confident opinion of the horse's recovery. I applied the blistering ointment more than once. There is a very great difference between applying blistering ointment and a blister. By the blister you produce a discharge; by the blistering ointment you increase the vascularity. Both blister and ointment are the same thing. I mean that I produce vascularity by a small quantity, and a blister by a larger quantity—the strength and the effect depending upon the quantity of the blistering material. I use a preparation of mercury. The ointment is rubbed in, and not applied as a blister is to the human

subject. In such a case as I was treating, it would be improper to apply blistering ointment as long as inflammation existed. I first applied the blistering ointment about three or four weeks after the horse came to the hospital. The horse was in much the same condition on the 24th June as when I received it. He had not deteriorated in condition. It was not in worse condition as evinced by its appearance. I am a member of the Royal College of Veterinary Surgeons. There is only one college of veterinary surgeons. I am a member of that. The offices and building of that college are in London. The college consists of the members of the profession. I have received a diploma of that college, not from the offices in London, but I passed an examination before the Board of Examiners in Edinburgh, and received a diploma in consequence. That was the Board of the College of Veterinary Surgeons. There is a Scotch Board and an English Board of the same body. I belong to the Scotch body. My diploma bears the address of the office in London. I got my diploma in May, 1862. I frequently saw the horse fed. He was fed in the morning, in the middle of the day, and in the evening. I visited him every day regularly. I used to go there about eleven o'clock in the morning. I think the casting took place about four or five days before Mr. Mogg came. I did not write and inform Mr. Mogg of the accident, because I did not think it necessary to do so. Mr. Mogg drew my attention to the stones being in the yard, and I gave orders to remove them. When I went to the hospital the next time they had been removed. When Mr. Mogg came in June there were a few stones in the yard. They were not the same stones. The yard is paved with stones, and loose stones are continually working up. The agreement was 7s. without oats, and treatment extra. I told Mr. Mogg 10s. was our usual charge. I took off 3s. for oats. I consider 3s. a fair reduction. I thought it would be better, from the nature of the complaint, that the horse should not have oats. I had not then seen the horse, but acted upon the information I had received from Mr. Mogg. After seeing the horse I still thought it would be better without oats. When a horse is suffering much pain, it would be improper to give corn. After Mr. Mogg saw the horse in June, and before he took it away, it had corn. Its condition was much the same, but its pain was less, when it was taken away. It was less lame when it left me than when it came. I gave the horse corn, because Mr. Mogg found fault with the food it was receiving. The corn would not lessen the horse's lameness, but it would not do harm. The horse left the hospital on the 12th July. I used blistering ointment twice altogether. The first time was three or four weeks after the horse came to the hospital, and the second time was eight or ten days afterwards. Both times were before Mr. Mogg saw the horse. The inflammation ought to have subsided before the use of the blistering ointment, and I was of opinion that it had done so. I did not remain of the opinion when the horse left the hospital that the inflammation had subsided. When the horse left the hospital, I did not express an opinion that it was incurable. I have a case-

book, but it contains no entry of my treatment of this horse. It would have taken too much time. I had about three horses in the hospital at the time, the entries respecting which would have taken too much time. The detailed account of the case given by me to Mr. Constable, and alluded to by Mr. Constable in his letter of the 5th July, was written, not verbal.

(*To be continued.*)

SITTINGS AT NISI PRIUS, IN MIDDLESEX,

(*Before* Mr. Justice Byles, *and a* Common Jury.)

MUSGRAVE *v.* GARDINER.

The plaintiff was a surgeon in practice at St. John's Wood, and towards the close of last year he purchased a horse of the defendant, a horse-dealer, for £42, and the defendant warranted it sound. Almost as soon as it was delivered it was found that there was something the matter with the horse, and Mr. Mavor certified that there was disease of the fetlock joint, and that the animal was unsound. It was accordingly sold at Aldridge's, and netted £13 9s. The plaintiff sued to recover the difference between this sum and the purchase-money, and, in addition, he claimed a small sum for expenses to which he had been put.

Verdict for the plaintiff for £29 14s. 4d.

PADDISON *v.* DYMOND.

The plaintiff was a farmer, near Lincoln, and he purchased, at Howden Fair, in Yorkshire, of the defendant, a horse-dealer, a hunter which was warranted "sound and free from vice." Almost as soon as it got to the plaintiff's place he noticed that there was something wrong about the horse, and a veterinary surgeon being sent for, he certified that the horse, instead of being sound, had a cataract in the near eye, a bone spavin in the near hock, and a chronic disease in both fore feet. The defendant offered to exchange it for another horse, but this was not in fact done, and the animal was sold by auction for £24 18s.

The jury gave a verdict for the plaintiff for £64 16s. 9d.

OBITUARY.

In the military obituary for the last month we find Henry Hogreve, veterinary surgeon, half-pay 15th dragoons.

Died on February 17th, aged 37, Sargeant Terry Harman, M.R.C.V.S., Arundel, Sussex. His diploma bears date April 30th, 1847.

THE

VETERINARIAN.

VOL. XXXVIII. No. 448. APRIL, 1865. Fourth Series. No. 124.

Communications and Cases.

TOXICOLOGICAL NOTES.

Communicated by Professor Tuson.

Note I.—*Poisoning of Cows by Bullet-spray.*

For the following particulars in reference to a case of poisoning by bullet-spray, supplementary to the cases recorded in the *Veterinarian* for May and August of last year, I am indebted to the courtesy of Mr. Walker Watson. On the 10th of January I received from Mr. Watson portions of the reticulum, liver, and spleen of the cow referred to in the subjoined account as having died on the 7th of January, 1865.

It may at once be briefly stated that chemical analysis revealed the presence of lead in the liver and spleen. In this particular instance it was not considered necessary to analyse the coats of the reticulum, inasmuch as abundance of bullet-spray was observed to be lying upon or adhering to the lining membrane of the viscus, and it was considered safe to infer that the absorbed lead, discovered in the liver and spleen of the animal, was derived from that found in the stomach in a metallic state.

Mr. Watson wrote as follows: "The cow from which the viscera I forwarded to you were taken was the property of Mr. Mullins, of Newbold, the same gentleman who had previously lost several cows from the effects of lead partaken

of in the form of bullet-spray. I may state that between November, 1863, and April, 1864, Mr. Mullins lost three cows, all of which presented similar symptoms. The cause of death was, however, not known until the attendants accidentally cut open the stomach of the third animal that died, and found pieces of lead in it. These, on examination, proved to be the spray of rifle bullets which had been partaken of by the animals by being mixed with the herbage surrounding the rifle-butts. The particulars of this case will be found in the *Veterinarian* for May, 1864.

"On June 7th, 1864, another cow died, presenting similar symptoms, and fragments of lead in considerable quantities being found in the stomachs: the viscera were forwarded to you for analysis, the results of which you have recorded in the *Veterinarian* for August of the same year.

"My attention at this time was directed to the other cows that had been kept on the same pasture, and I particularly noticed the animal whose viscera I forwarded to you a few days ago.* She was between four and five years old, and, like the other animals, had been kept in the field adjoining the rifle-butts from May, 1863, to the commencement of November in the same year, and from that period until May, 1864, had been kept in a straw yard, and quite away from any means of getting at the bullet-spray. About the middle of May, 1864, she was turned, with many others, into the field adjoining the rifle-butts, and kept there until the beginning of June, when my attention was called to her, and she was removed to another part of the farm. Now, although this animal was suffering from the effects of lead taken by her during the summer and autumn of 1863, it is just possible that she might have also obtained a fresh supply during the three weeks she had been turned into the pasture after leaving the straw yard. I do not, however, think that such is probable, inasmuch as the rifle corps had taken every precaution by employing persons to pick up all the fragments of lead, and had also adopted felt targets, by which means the spray from the bullets was prevented leaving the targets. Be this as it may, from this time she was placed on another part of the farm, a considerable distance from the butts, and kept there until she died on January 8th, 1865. The only treatment adopted consisted in the administration of dilute sulphuric acid for about six weeks; but as the animal continued to get worse no other medicine was given, but she was then fed upon the most nutritious food that could be obtained.

* Received January 10, 1865.—R. V. T.

I saw the cow frequently during her illness, and the following are the chief symptoms she exhibited. She would stand in a field away from the other cows, and had a 'tucked-up' appearance, staring eyes, a dull, sleepy look, and a somewhat staggering gait. She frequently stretched herself and groaned heavily. The bowels were constipated, appetite good, but the milk nearly all gone. She continued much in this state, with varying appetite, her bowels being at times constipated, at others relaxed. She gradually wasted away, although being liberally supplied with good food. About a month before her death a large œdematous swelling appeared beneath the lower jaw, and she began to get rapidly worse. Three days before her death she got down and was unable to rise. I may here mention that, unlike the last animal that died, her bowels had been constipated for several weeks prior to her death.

"I made a *post-mortem* examination the day after she died. A more emaciated object it was difficult to conceive, her bones almost penetrated through the skin. Upon opening the abdominal cavity, about three gallons of a straw-coloured fluid escaped. The large and small intestines, especially the latter, presented a peculiar blue appearance, which strikingly contrasted with the extremely pale aspect of the other viscera. The stomachs being removed I first opened the rumen, but I could not find any lead. This viscus contained some ingesta. On opening the reticulum, which also contained some food, bullet-spray in large quantities was discovered. In the omasum no spray could be seen, while in the abomasum small quantities were present. The liver and kidneys were paler than natural; the lungs congested, but in other respects healthy. The heart was natural, and both sides contained a coagulum of black blood.

"Before concluding this account, there are one or two other points of interest to which I may perhaps allude. The first is with reference to the length of time the lead must have remained in the stomach. The cow whose viscera you had for analysis last June must have obtained the lead between May, 1863, and the beginning of November of the same year, consequently it remained in her stomach at least twenty-eight weeks. With respect to the cow that died on January 8th, 1865, it is important to observe that the only periods at which she could have obtained the bullet-spray were between May and November, 1863, and from the end of May to the beginning of June, 1864, but, as before mentioned, I do not think that she gathered up any lead during this latter period, owing to the precautions exercised by the

authorities of the rifle corps. It is, therefore, highly probable that the lead found in her stomach had been lying there fifty-eight weeks.

"One symptom which is said to be characteristic of lead-poisoning, viz., a blue line round the gums and teeth, was absent in every case. Finally, it is worthy of remark that two of the cows suffered from violent diarrhœa, while the others were constipated."

It will doubtless be conceded that the medical and chemical evidence afforded by the investigation of the foregoing case agrees with, and confirms, that obtained from similar inquiries in which Mr. Watson and myself were engaged last autumn, and that there can be little doubt all the cows, in the stomachs of which bullet-spray was discovered, died from the effects of slow poisoning by lead.

Note II.—*Poisoning of Animals by Lead Paint.*

The following is an abstract of the history of several cases of the poisoning of some animals by lead paint; most of the particulars of which have been kindly furnished to me by Mr. Baldwin, M.R.C.V.S., of Fakenham, Norfolk. Mr. Baldwin's client having lost *seven cows and a bull*, under circumstances which excited suspicion that their death was attributable rather to extraordinary than usual causes; the four stomachs of one cow, and three of another cow, were forwarded to Professor Varnell, for his inspection. Accompanying the viscera was a letter from Mr. Baldwin, containing a description of the symptoms and *post-mortem* appearances presented by the animals. Mr. Baldwin stated that "the cows, when first affected, lost their appetite, which was quickly followed by obstinate constipation, and suspension of rumination. The urine became highly coloured, pulse between 90 and 100, breathing accelerated, and muzzle dry. Coma soon set in, which lasted from three to four hours, and, finally, death put an end to the sufferings. On making a *post-mortem* examination of the cows nothing worth noting was observed in the condition of any of the organs, excepting that the *omasum* was much distended and its contents were very dry."

Mr. Baldwin further remarked that, "owing to the scarcity of hay, and the failure of the turnip crop, straw had been employed, to a great extent, as a substitute for these two kinds of provender;" and that he—"thinking that the straw might in some measure be regarded as the cause of the

symptoms—had changed their diet for one of superior quality. Small doses of aperient medicine, also, were administered to some of the affected animals, followed by the exhibition of diffusible stimulants. Some of the patients were, and others were not purged by the aperient medicine. The treatment, however, proved unsuccessful in arresting the progress of the disease, and the animals ultimately succumbed." Subsequently to the death of the animals Mr. Baldwin discovered that they had for some time been eating their food out of bins that had been recently painted, and that, on examining the bins, it was found that all the paint had been taken off the bottoms.

In communicating the foregoing information, Mr. Baldwin requested Professor Varnell to furnish him with a professional opinion on the cases, and to say whether he thought it possible the animals, while feeding, had detached enough of the lead paint from the bins to kill them. Professor Varnell replied, that he considered the evidence placed before him was sufficient to warrant the belief that the animals had died from the poisonous effects of lead, and suggested that the stomachs of the cows sent should be placed in my hands for analysis. Mr. Baldwin complied with this suggestion, and I analysed the stomachs and contents of both cows. No difficulty was experienced in detecting lead in the coats of the omasum and abomasum of either of the animals, as well as in the contents of the abomasum. The same poison was likewise discovered in the spleen of both cows, thus proving the absorption of the metal and its passage into the circulatory system. The results of chemical analysis, conjoined with those derived from medical and general observation, therefore, substantiate Professor Varnell's opinion, that these cases are additional instances of farm-stock being poisoned by pigments containing a compound of lead.

In a letter to me, dated February 4th, 1865, Mr. Baldwin states that, after receiving my report, the bottoms of the bins were planed, so as to completely deprive them of paint, and that since this precaution was taken, no other cases of illness had occurred among his client's stock.

LEAD POISONING IN CATTLE, FROM TAKING THE SPLASHES OF SPENT RIFLE BULLETS.

By James Mason Broad, M.R.C.V.S., Bath.

I forward the particulars of a case of lead-poisoning which has lately come under my notice for insertion in the *Veterinarian*. I find that Mr. Watson, of Rugby, has furnished the profession with the details of "a *supposed case* of lead-poisoning" from a similar cause; but as no analysis was made of the organs of the dead animals, there was no positive evidence afforded of such being the case. The circumstances, however, which were connected with the death of the animals are so similar to those I shall relate, that I think no doubt can exist that Mr. Watson formed a very correct opinion of the cause of death.

The particulars are these:—On February 15th, 1865, Mr. White called to consult me in reference to his cows, one of which had died on the 1st and another on the 14th. These animals, with several others, had been falling off in condition for some months past. Mr. White brought with him the *reticulum* of one of the cows, together with a quantity of bullet splashes which the butcher had accidentally found in the viscus. The first cow that died was not examined.

Upon inquiry I found that the cows during the summer months had been pastured in a meadow in which some rifle-butts are situated, and that they had never since done well. Mr. White immediately upon finding the lead suspected that it was in some way connected with the death of the cows. The stomach and contents were laid aside for subsequent examination, and I was requested to visit the place and further investigate the case. I may here state that Mr. White rents the farm of H. D. Skrim, Esq., who kindly allows the 1st, 2nd, 14th, 17th, and 18th Somerset Rifles, and also the Militia, to practise at the butts.

Upon inspecting the other cows I found them, as Mr. White had described, to be moping about and evidently suffering from some chronic impairment of health. They had a somewhat vacant expression, but there were none of the ordinary symptoms of lead-poisoning present, such as colic, paralysis, loss of appetite, &c. On visiting the ground I found a great deal of lead spray all round the butts, and some even at a distance of two to three hundred yards. One important fact which I elucidated was, that the butts had been moved forward last summer some distance from a bank

and a more sheltered position. This bank had in a great measure prevented the splashes flying over the field—a fact which will to some extent account for animals not having been affected before, as there has been shooting going on for years. The cows had not been pastured in the field since November last.

REMARKS AND ANALYSIS.

February 15th, 1865.—Received this day the *reticulum* and contents of a cow that had died on the 14th instant, the property of Mr. White.

Externally the organ presented a somewhat corrugated appearance. It contained a small quantity of ingesta, with which was found two and a half ounces of lead, evidently the splashes of spent bullets. The mucous membrane was inflamed.

17th.—Received this day the whole of the digestive organs of another cow, together with some milk and urine. This animal had been killed, as it was evident she would not live long. Upon emptying the paunch of its contents a large quantity of lead was found, a considerable portion of which was covered over with a white deposit.

Upon analysing a portion of the liver, absorbed lead was readily found. It was separated and collected in the form of sulphide.

In a portion of blood *minute traces were found.*

In the urine, *traces.*

In the milk, *none detected.*

In the coats of the stomach, *traces.*

Upon examining the lead itself, I found it to consist of numerous pieces bent in all shapes, and covered with a dirty white deposit, as before remarked. Upon analysis this deposit proved to be chiefly the carbonate with other salts of the metal. Several caps, pins, nails, &c., were likewise found in the rumen, but these were not coated with a deposit.

Having thoroughly investigated this case, and remembering *the quantity of lead found*, bearing in mind also that the cows which were summered on the pasture in which the butts are erected had never done well, while, on the contrary, those which had not been in the field had thriven satisfactorily, I was of opinion that the metallic lead partaken of had in time been converted by the acids of the stomach into soluble salts of the metal, and that these, being absorbed, had brought about a deranged state of the organism, particularly of the digestive functions, and to an extent so severe as to cause ultimately the death of two of the animals, and a great loss

of flesh and condition in the others. In my opinion, therefore, the symptoms and appearances were indicative of chronic poisoning.

In conclusion, I may remark that the officers who used the butts have acted most liberally in this matter, and paid the entire loss.

[Although there was no analysis instituted in connection with the particular cases referred to by Mr. Broad in the foregoing paper, and communicated to the *Veterinarian* by Mr. Walker Watson in May last, still, other and similar cases subsequently coming under his notice induced him, with the owner's consent, to send portions of the viscera of a cow and some of the bullet-spray to Professor Tuson for chemical investigation. The results of Professor Tuson's experiments are recorded in the *Veterinarian* for August last, and will be found to corroborate Mr. Watson's opinion, that the lead spray underwent solution in the alimentary canal, and subsequent absorption into the circulation, thus causing the death of the animals.

We are also enabled to add to these cases in our present number, as will be seen by our publication of "*Toxicological Notes,* by Professor Tuson." For these reasons Mr. Broad's communication will be read even with greater interest, as it gives additional testimony to that already afforded by Professor Tuson and Mr. Watson of the loss that may accrue to farmers from their cattle picking up bullet spray on pastures in which rifle-butts are erected.]

SYMPTOMS OF "CARBON."

By W. Ernes, M.R.C.V.S., London.

In Reply to Mr. Cooper.

Gentlemen,—In reply to Mr. Cooper's letter I send you the following symptoms of carbon (anthrax), which is enzootic in the province of Liege, extracted from the report of W. J. P. Warsage, Government Veterinary Surgeon.

1*st Period.*—In the pasture the animal feeds at intervals—stops, jumps about, then feeds again, and continues these irregular movements until it gets to a cool spot, where it takes a longer rest. These symptoms I cannot consider otherwise than resulting from delirium, arising from a grave lesion of the brain. They are accompanied by other phenomena, such as the eye being haggard, the conjunctiva of a

red amaranthine colour, the coat staring, the skin covered with moisture, the pulse strong and intermitting, the beatings of the heart loud and irregular. Rumination still persists, and is only suspended a short time before death. This period lasts from eight to twelve hours, and often passes off without being perceived.

2nd Period.—In a short time the above phenomena gain intensity. To the apparent liveliness, induced by the cerebral excitement, follows a state of coma; the external temperature of the body is lowered, small drops of cold sweat appear like pearls at the end of the staring hairs, there is a slight trembling at the stifle which extends to the neighbouring regions, the locomotion becomes unsteady, the eyes are half shut, the conjunctiva is of a yellowish-red colour, the beatings of the heart are strong, tumultuous, irregular, and intermitting, the vertebral chain is very sensitive to pressure, particularly at the withers; the respiration is accelerated and accompanied by violent beating of the flanks, the animal grunting at every expiration. This completes the symptomatology of the second period, the duration of which is from two to four hours usually, but it is not exceptional when the time is much shorter.

3rd Period.—The aggravation and danger are more manifest: the pulse is small, thready, sometimes imperceptible, the sight completely lost, the eyes sunk in their orbits, the humour of the eyes turbid, the conjunctiva of an intense yellow colour, and yellow mucus escapes from the nostrils. Grinding of the teeth is present, rumination is totally stopped, a short cough is heard, the respiration is laboured, fœtid diarrhœa sets in; the patient gets up and down frequently, moans, moves its head from side to side, indicative of the state of coma, which is interrupted by deep moanings; finally, all the senses are blunted, the sight and hearing are lost, the animal trembles, the legs bend, and a fall is imminent; he falls, gets up again, has some convulsive movements, then falls and dies in convulsions. This period is not more than from two to four hours' duration, so that the whole length of the malady is not more than from fourteen to eighteen hours, and often death follows the invasion in much less time.

I do not know that all these symptoms are similar to those in Mr. Cooper's case; I have only transcribed them to show that there are varieties of carbon (anthrax) in which the circumscribed swellings, deemed as an indispensable character of this malady, do not exist.

It might be argued that the malady of which I have given

the symptoms is not carbon, but both the etiology and the autopsy clearly establish the true nature of it.

Yours truly.

To the Editors of 'The Veterinarian.'

BOTANY AS APPLIED TO VETERINARY SCIENCE.

By W. Watson, M.R.C.V.S., Rugby.

(*Continued from p.* 15.)

Helleborus fœtidus (*Stinking hellebore*).—*Stem,* many-flowered, leafy. *Leaves,* pedate, evergreen, uppermost ones gradually becoming *bracteas*. *Flowers,* globose; calyx of five persistent sepals, converging, often tipped with a purple tinge. *Petals,* eight to ten, small, tubular, and nectariferous. *Stamens,* numerous. *Follicles,* three to ten, sessile."—*Hooker and Arnott.*

This perennial plant, which is known in different districts under the following names—*Stinking hellebore, Bear's-foot, Ox-heel,* &c.—is found growing in pastures and on the borders of thickets, in many parts of this country, but in greatest abundance in chalky districts. Its stem rises from one to two feet high, bearing numerous leaves of a dark glossy-green colour. Its flowers, which appear in February and March, are cup-shaped, of a greenish colour, the inner edges of the sepals being usually tipped with purple. "The whole plant, as the name implies, has an extremely fetid smell; the taste of the leaves is bitter, and exceedingly acrid, so much so that when chewed it excoriates the mouth; the stipules are more acrid than the leaves." The root, which is small, with numerous dark-coloured fibres attached, is anthelmintic, but exceedingly, and even dangerously, virulent. The dried leaves are emetic, and powerfully cathartic.

This agent has been chiefly employed in veterinary medicine as an anthelmintic, and also inserted as a seton in several diseases in cattle, but very powerful and sometimes fatal irritation has resulted from its use. Some very interesting particulars respecting this plant will be found in the *Veterinarian* for January, 1847, by Mr. Thomas Mayer, who relates a case that came under his notice, in which the plant had been used as an anthelmintic. "A gentleman, from his horse not carrying condition, gave it three half pints of the leaves chopped small, and after being digested in some water, mingled in a bran mash. This the animal took the first night, without any perceptible incon-

venience; he, therefore, on the second night, administered similarly two half pints. The following morning he found the animal very ill from violent inflammation of the mucous membranes of the bowels, accompanied with constant and violent tenesmus, and a constant discharge of frothy mucus; but there was no effort to vomit, its effects being more concentrated upon the large intestines. We did not see it till 11 a.m., when we found the vital powers fast sinking, and it died shortly after." Mr. Mayer also relates a case in which the hellebore root had been used in pegging an ox. He says, "the animal being in high condition, it brought on most extensive inflammation of a chronic character in this instance, the swelling occupying, when I was called in, the upper part of the front of the neck, down to below the point of the sternum, the wound presenting a yellow sloughing appearance, accompanied by a fetid discharge." In this instance, by antiphlogistic treatment, the animal recovered.

The following case, of a similar nature, was brought under my own notice a few years ago. On the 6th of July, 1857, I was sent for, in the evening, by Mr. Cowley, of Kilsby, a village about five miles from Rugby, to see a steer that was very ill. From inquiries, on my arrival, I ascertained that Mr. Cowley, like many other farmers in the district, had sustained recent losses from the prevalence of pleura-pneumonia amongst his cattle, and having lately purchased seven or eight valuable steers, he, with a view of preventing an attack of this disease, had setoned them all, and, by way of applying the remedy more direct to the parts implicated in pleura-pneumonia, had inserted pieces of the stem of the *Helleborus fœtidus*, or Bear's-foot, as he termed it, on the side of each animal, on a line with, and a little posterior to, the middle of the scapula. The result of this was, that in a few days great irritation was set up in the parts, producing considerable swelling, which was much increased in consequence of there being no depending orifice whereby the effused fluid could escape. On examining the animal, I found his side was swollen to a great size, the swelling extending along the abdomen. An attendant was fomenting the part. The wound in which the *hellebore* had been inserted presented a very unhealthy appearance, discharging a darkish-yellow material with a very offensive odour. The animal was trembling violently, and foaming at the mouth, and when made to move did so with a staggering gait, as though his hind extremities were partially paralysed. He refused both food and water; the bowels were relaxed, the fæces being of a black colour; the respiration was much increased, but in

consequence of the trembling of the animal the pulse could not be accurately taken. The treatment consisted in at once laying open the wound, and removing the piece of hellebore, freely scarifying the surrounding parts, and also making depending openings in different parts of the swelling for the escape of the accumulated fluids. Warm fomentations were ordered, and a full dose of purgative medicine to be at once given, and brandy-gruel every three hours after. During the night this animal died, and on the following morning I made an examination of the other animals. On the sides on which the seton had been inserted much swelling had been produced, the wounds presenting a very unhealthy appearance; but in none of them were the constitutional disturbances so great as the one that died the night previous. The wounds were still open in each animal. The hellebore was removed, and the surrounding parts freely scarified; the parts were kept clean by warm fomentations, and a liniment, consisting of turpentine and olive oil, applied. To each beast a brisk purge was given, and followed up by the daily administration of cinchona bark and other tonics. None of the other steers died, but, after a time, large pieces of skin sloughed off the sides of the animals, leaving a raw-looking surface, which eventually healed over, but left the part denuded of hair.

Helleborus viridis (*Green hellebore*).—*Stem*, few-flowered, leafy. *Leaves*, annual, large, digitate, on a broad stalk; upper ones sessile, segments linear-lanceolated, serrated at the extremity. *Calyx*, spreading of five persistent sepals, large, and of a greenish-yellow colour. *Petals*, eight to ten, small, tubular, and nectariferous. *Stamens*, numerous. *Follicles*, three to ten, sessile."—*Hooker and Arnott.*

This, like the *Helleborus fœtidus*, is a perennial plant, found growing in many parts of the country, especially on chalky soils. It seldom grows more than a foot in height, and its flowers, which appear in April and May, are of a yellowish-green colour. It much resembles the *Helleborus fœtidus*, but differs from it in being a smaller plant, with fewer flowers, which are expanded, and not cup-shaped, and the leaves do not possess that peculiar glossy green colour as in the *Helleborus fœtidus*. It resembles it, however, in all parts of the plant possessing powerfully acrid and irritating properties; and "although it has not the reputation of being medicinal, yet it is much more virulent than many a native plant which does possess that reputation." The root, which is of a blackish colour, is sometimes substituted in commerce for that of the *Helleborus niger*.

LAMINITIS PRODUCED BY EATING OATS.

By Stephen Beeson, M.R.C.V.S., Chalfont, St. Peter.

History.—On Friday, December 11th, 1863, four horses belonging to Mr. J. Andrew, farmer, were employed in carting winter oats from a thrashing machine, at work in a field, to the barn. As the men were allowed to give them some of the corn instead of hay, they did so in a very thoughtless manner, not only continually filling the nose-bags while the horses were at work, but on returning home taking with them a large quantity of oats, which they emptied into the mangers. On the next morning, when the men went to attend to the horses, it was found that two of them had not eaten any hay during the night, and that they also refused to bait with the other horses. Thinking the cause was owing to their having eaten so much the day before, the men took no notice of it, and the horses were accordingly taken to work. As the day passed on, however, the animals became so dull and lame that one man thought it advisable to have his horse fresh shod—the fore shoes being worn very thin. This was done, but it gave no relief, and the animal was therefore taken home. The other horse had been brought home just before, both being so lame, to their owner's surprise, that they could hardly stand.

12th, 4 p.m.—A messenger was despatched for me, and on my arrival I found the two horses very dull, their heads hanging over the manger, and constantly shifting their feet, often putting the fore ones forward, and placing the hind ones as much as possible under the body.

The pulse numbered about 65, and the breathing was 30 per minute. On inquiry I was informed that they had not partaken of any food all day, nor had they passed only a small quantity of fæces.

Diagnosis.—Laminitis produced by indigestion.

The treatment consisted of bleeding and laxatives, with enemas, until the bowels were well open. I also removed the shoes, and rasped the wall thin, and pared out the soles. The feet were kept in poultices; and after the bowels had been acted upon, fever medicine was given. The animals kept laid during the activity of the disease, but especially at the commencement.

One, a young horse, five years old, with rather flat feet,

recovered in about ten days. The other, a chestnut mare, twelve years old, with strong, upright feet, has been left with chronic lameness, and is almost a useless animal.

Remarks.—At first I was of opinion that these cases were very unusual ones, but I am now inclined to believe that they are not so. Indeed, I think that many cases of laminitis are due to an excess of oats being given, as well as wheat, which has long been known to produce acute attacks of laminitis. Practitioners should look to this and give us the result of their observations. In both animals the oats appeared to have been well masticated.

POISONING OF SIX STIRKS BY THE ADMINISTRATION OF COMMON SALT.

By J. R. Dobson, M.R.C.V.S., Ashby-de-la-Zouch.

Early in January of this year I was sent for in haste by Mr. Walker, of the Dells Farm, about a mile from my residence, to see six two-year old beasts, which the messenger stated had been taken seriously ill in consequence of the administration of a quantity of *common salt*.

On my arrival—which was somewhat delayed in consequence of my absence from home at the time of the summons—I found two of the animals dying, and the remaining four evidently suffering from the effects of poison, whatever that might be. Upon inquiry I learned that Mr. Walker, the owner of the animals, had lost one of the stirks from black-leg a few days previously, and that in order to guard against any other subsequent attack of disease, he had administered to each of the animals a pound of salt, a remedy which he assured me was a common one with him, and which he had repeatedly used with good effects in similar cases, and to animals of the same age. The dose —a pound of salt—was weighed out, mixed with a quart of warm water, and administered to each stirk about 11 a.m. On Mr. Walker's going out into his home field about a quarter of an hour afterwards, he was surprised to see the stirks galloping about the enclosure in an apparent state of madness; they would rush forward for a few yards in a frantic state, stagger, and fall, then rise again, and after a minute or two resume their eccentric way of progression. After ob-

serving them for a short time, two, the worst cases, fell, and were unable to rise again, evidently from paralysis of the hind extremities. The breathing was increased and laborious. Spasmodic twitchings of the muscles of the head, neck, and forelegs, and that to an extraordinary degree, were likewise present. The pupils of the eyes were also dilated and insensible to light. It was in this stage that I had an opportunity of examining them; but, as before mentioned, in four of the animals the more severe symptoms had passed off, and it was in two only that the effects seemed permanent. The treatment consisted in the administration of large quantities of linseed gruel, with which was united diffusible stimulants, in the shape of strong ale and ether. In one of the two cases, described as being the worst, *tympanitis* came on, which had to be combated by the introduction of the trocar. Both animals gradually sank, and died on the following day. The others were soon out of danger, nor did any untoward symptoms result, such as superpurgation, or irritation of the intestinal canal.

Having been in the habit of seeing common salt administered to cattle as a purgative for some years, and that with good effect, I must say that the untoward result of these cases has somewhat surprised me, for, although the dose given—a pound of chloride of sodium—was large, it certainly cannot be called excessive, nor do the symptoms coincide with those which we might suppose would proceed from an overdose; to my mind they more nearly resemble those produced by the *compounds of lead*. I examined the remainder of the salt, from the bulk of which the animals were dosed, but could not detect, by analysis, a particle of any other foreign ingredient. The *post-mortem* examination was very unsatisfactory; beyond a faint blush of inflammation in the lining membrane of the rumen and omasum, and a few ecchymosed spots in the abomasum, there was not a trace of disease.

[We regard these cases as a valuable addition to veterinary toxicology, as few persons are aware of the danger which is likely to attend the too free use of common salt. A few years since we exhibited *three ounces* of salt dissolved in a pint of warm water to a sheep which had been *kept fasting* for two days previously, and thereby produced immediate efforts to vomit and speedy death. Many cases of the poisoning of pigs by this agent have also been published in our journal from time to time.—Eds.]

ON THE EXTENSION OF PROVINCIAL MEDICAL ASSOCIATIONS.

By R. H. Dyer, M.R.C.V.S., Torquay.

Gentlemen,—I made, some time since, an attempt to establish a veterinary society in Ireland, but feeble indeed it proved to be, from the simple fact that I first made my wishes known to a gentleman, who was in every way qualified to undertake the necessary steps for bringing so good a movement in veterinary medicine to a successful issue, but found his objections immovable, and not intending myself to remain in the country, I at once gave up all hope of seeing an association established there. I merely mention this, in order to show that I have been alive to such a thing long ago.

We learn from the register that the number of qualified men in the four counties of Cornwall, Devonshire, Gloucester, and Somerset, is forty-four. Now, I am anxious to appeal to these members of the profession, through the medium of the *Veterinarian*, to at once come forward and endeavour to establish an association for this district, say at Plymouth or Bristol. It seems to me that Plymouth is the most desirable place, from the fact of its being the *centre*, as it were, of the district, and also from the fact of the county of Devon containing the majority of practitioners, viz., twenty-three.

Upon looking over the dates of the various diplomas, it will be seen that out of the forty-four members eight passed since the year 1860, fourteen between the years 1850 and 1860, and twenty-two between the years 1822 and 1850, so that we may fairly infer that there are many old and experienced practitioners amongst the number—hence it is very reasonable to believe that much *valuable* information may be obtained by an interchange of opinion, which is always a necessary attendant when meetings of this kind are held. I trust I may venture to hope that you will exercise your influence in this, as in every other cause where the welfare of the veterinary profession is likely to be enhanced.

In conclusion, I may be permitted to state that if gentlemen will signify their willingness to co-operate with me in endeavouring to establish a *Provincial Veterinary Medical Association* for the four counties, or any one of them in addition to Devon, or even for Devon alone, I shall be happy to lend all the assistance which is in my power, feeble though it be. I am, yours, &c.

To the Editors of the 'Veterinarian.'

ON THE FORMATION OF A WEST OF ENGLAND VETERINARY MEDICAL ASSOCIATION.

By G. Bodington, M.R.C.V.S., Canton, near Cardiff.

"——— Thoughts shut up want air,
And spoil, like bales unopen'd to the sun,
Had thought been all, sweet speech had been deny'd."

Gentlemen,—No one interested in the progress and well-doing of veterinary medicine, or conversant with the requirements of the "body corporate," could read your publication of the past month without being much pleased with the happy state of "things professional" now existing in the north of England. I allude to the formation of veterinary medical associations at Liverpool, in Yorkshire, and at Newcastle-on-Tyne, &c. I look upon this as the germ, from whence must inevitably spring, not only the bud and the blossom, but the fruit also of scientific research; reciprocity of good feelings and opinions, and the very bond of unity and peace. My firm conviction is, that it is impossible to over-estimate the great benefit which will result from such gatherings, and I am sure all will accept your "leader" with thanks, as being well timed, and a faithful portrayer of things as they are.

Being a believer both in the wisdom and policy of such institutions, and having a desire for their promotion and development, I have been induced to trespass upon your valuable time and space, as it has occurred to me that while our brothers in the north are "up and doing," we, in the west and south, are standing by, mere spectators. Now, why is this? It certainly *ought* not, and *must* not be. Let it not be said unto us, "Why stand ye here all the day idle?"

Within a circuit of a few miles are the important towns of Bristol, Gloucester, Bath, Cheltenham, Newport, Cardiff, &c., with their equally important agricultural districts adjoining, "within easy distance of each other by rail," all of which can contribute members of high reputation, and extensive practice, to aid in the work. I therefore take this opportunity, through the pages of your Journal, to suggest the desirability of a meeting being held at Bath, Bristol, or Gloucester, for the object of starting a "*West of England and South Wales Veterinary Medical Association.*" No doubt exists in my mind

that such a call (from a few of our leading practitioners) would be unanimously and liberally responded to. I, for one, shall be most happy to contribute my help to such a work. Either of the towns named would, I think, be suitable, being centrally situated, and of easy access for the counties of Gloucester, Berks, Wilts, Somerset, Devon, Monmouth, Glamorgan, and even Oxford.

Having said thus much, I will not now trespass further upon your space, but sincerely hope that enough has been advanced to arouse in my "brother Vets." the lion spirit, so that the desired end may soon be realised.

I am, yours, &c.

To the Editors of 'The Veterinarian.'

WORMS IN THE SCROTUM OF A COLT, AND STOMACH OF A DOG.

By C. M. Clancy, Veterinary Student.

Feeling that the following cases are of some professional interest, and one of them of rare occurrence, I beg to submit them to your consideration, and to ask you to give them a place in the *Veterinarian*, if deemed of suffieient importance. In May, 1864, I was requested to castrate a gray cart-colt, rising three years old, the property of a gentlemen in my neighbourhood, in Ireland. I found the colt very thin, having an ill-conditioned state of his coat, but otherwise he appeared quite healthy.

I had him cast for the operation on the near side, and having drawn his off hind leg up to his shoulder, and secured it there, I proceeded to operate in the usual manner. On making an external examination of the scrotum I found that its walls were very much thickened, and that the off testicle was indurated, and somewhat enlarged. The near testicle I found to be wasted, and not to be larger than a common walnut. It was also soft and pulpy.

On cutting into the scrotum the tissues were seen to be of a dark livid hue, and when I exposed the off testicle I was surprised to find a number of worms on its surface, and one or two actually adhering to it. I counted thirteen of these entozoa. They were about an inch to an inch and a half long, and of a reddish or flesh-like colour. I placed some of them on a piece of paper, and they twisted themselves about for some time, but all of them had ceased to live in about half

an hour after being removed from the scrotum. The testicle had assumed more the appearance of a fatty tumour than anything else I could compare it with. The near testicle was very much wasted, as before explained, and, like the off, was covered with small nodules, not much unlike minute warts.

The colt had been left out all the preceding winter on very bad, low, marshy land, which was the only reason that I could see to account for the state he was in. He did well after the operation, and I am not aware that he showed any symptoms afterwards of being infested with worms in the intestinal canal.

The other case was that of a foxhound puppy, ten months old, which was being reared by my brother for the master of the Kildare foxhounds. Several greyhounds were at the time ill with distemper in the yard, and I was desired to keep a strict watch on this puppy, which we felt almost certain would take this disease.

One day I noticed him sneezing, and making efforts at vomition, and feeling assured that these were indications of an attack of distemper coming on, I gave him an emetic, consisting of tartarised antimony and calomel. In about five and twenty minutes it acted freely, and after a time he ejected a mass of worms, about as large as a small hen's egg, knotted together in all manner of ways. I gathered them up, and counted them, and found the enormous number of 140 worms, varying from half an inch to three inches in length. The next day the dog appeared to be as well as ever, and so continued for the two months he remained at our place, before being taken into the pack.

[The worms found in the scrotum of the colt were doubtless specimens of the *Strongylus armatus*, an entozoon frequently present beneath the parietal portion of the peritoneum, as well as in other parts of the body. In our collection of parasites we have an example of one of these worms in the spermatic artery of an ass; and a few years ago we remember to have found a *Strongylus armatus* in the centre of a fungoid excrescence, which arose on the spermatic cord of a colt very shortly after castration. We are glad to see that the subject of entozoa is attracting public notice, and trust to be favoured with many more cases of their existence in our several patients.—Eds.]

CHRONIC DISEASE OF THE LIVER OF A COW, ASSOCIATED WITH A LARGE NUMBER OF HYDATIDS IN THE GLAND AND LUMBRICOID WORMS IN THE INTESTINES.

By J. Barnett, Veterinary Student, Market Drayton.

Your request, in the *Veterinarian* of this month, to be furnished with "a sheep the subject of the disease called 'Gid,' or with any entozoa met with in animals," induces me, in default of possessing either, to send you an account of a case I met with last October. I should have sent it at an earlier date, but for two reasons: *first*, that it was not so complete, in some of the particulars, as I could wish, and, *secondly*, because I was not quite clear that it would be of sufficient interest to merit a corner in your Journal.

On October 11th my attention was directed to a half-bred short-horn cow, aged, and in poor condition. She had been a noted milker, the supply failing only a day or so before this date, although she had been losing condition for some time. I ascertained that she had been pastured in some low peat-land, and had been exposed far more than was consistent with good management. Her leading symptoms were profuse alvine evacuations, accompanied with much flatus, and occasional clots of blood; quick and short breathing, with a peculiar moan at each expiration; horns, ears, and extremities cold; pulse quick and feeble. As we could give the owner but very slight hopes of her recovery, he desired us to prescribe for her, and stated that he would inform us of the result, as the distance was too far to warrant frequent journeys to a hopeless and, from age, a not very valuable animal. Some medicine was given, and in a few days he called, and informed us that the medicine gave temporary relief, and that a further effect of it was to dislodge numerous worms, from ten to fifteen inches long, much resembling the common earthworm, excepting that they were white in colour. He also said that, as the chances of recovery were so small, he did not wish her to be seen again.

She lingered on, until near the end of the month, when she died.

On my preceptor making a *post-mortem* examination, he discovered a greatly enlarged liver, and having satisfied himself that it contained a perfect legion of hydatids, he generously

denied himself the pleasure which he always takes in investigating diseased structures, so that I might have an opportunity of seeing it entire. When I arrived, I found that the liver was alone saved for my inspection, and consequently I am unable to speak of the condition of the other organs. Upon cutting into the gland, great quantities of the entozoa—commonly called hydatids—presented themselves. They were contained in cysts, and suspended in a pale-coloured fluid. I do not think any of the hydatids themselves could properly be called perfectly white, although they are so described by authors. Their size varied from that of a marble to a small egg. Their quantity, as well as their number and size, you will best imagine by my telling you that the fluid they contained was upwards of two gallons. The large cysts were of a semi-cartilaginous nature, and lined with a pulpy material, but many of the smaller ones had more of the character of a simple membrane. The liver had necessarily undergone considerable change of structure, and very many of its ducts were completely obliterated. The gall-bladder contained only a small quantity of bile, which was thick and ropy from long retention.

Upon my mentioning this case to Mr. Meek, a pupil of Mr. Kettle's, M.R.C.V.S., he informed me that they had had a case of a similar nature just previously, but that the liver was less enlarged, and that the gall-ducts contained many calculi. In my case I could not discover a single calculus, although the contents of the gall-bladder must have been of any but recent secretion.

I regret that I did not preserve some of the hydatids. I should certainly have done so but that, being a distance from home, I imagined I could not have conveyed them thither uninjured.

Facts and Observations.

Domestication of Animals.—Mr. F. Galton, in a paper entitled "First Steps towards the Domestication of Animals," has laid down the following conditions as being necessary. 1st. They should be hardy. 2nd. They should have an inborn liking for man. 3rd. They should be comfort-loving. 4th. They should be found useful to the savages. 5th. They

should breed freely. 6th. They should be gregarious. The first domestication of animals, he asserts, was due to a vast number of half-unconscious attempts made through the course of ages, and at length, after slow degrees, and many relapses, and continued selection, the several domestic breeds now existing became firmly established.

Man and the Ape.—Dr. Crisp, referring to the anatomical structure of the quadrumana, states: 1st. That the anthropoid apes, viewed both anatomically and in reference to the amount of their intelligence, are not entitled to the elevated position in which they have been placed by some anatomists. 2nd. That the line of demarcation between man and these brutes is so wide, and clearly defined, as to entitle the human family, as maintained by Blumenbach, Cuvier, and others, to a separate and exclusive division in the animal scale.

Acclimatization of Animals.—Dr. J. Gray, in his address at the late meeting of the British Association, referring to the above subject, stated he did not think that any of the wild animals it was proposed to domesticate could compete in feeding and fattening qualities with our present race of domestic cattle. Further, that although Asiatics have been able to draw largely upon the wild animals around them, yet these are but little suited for our northern climate. He also thought that it would be advisable to try, in attempting to introduce new domestic animals into our colonies, whether some of the domestic races of Asia or Africa might not be better adapted to their climates than many European breeds.

Vaccination from the Cow.—The foreign correspondent of the *Chemical News* states that the subject of vaccinating directly from the cow has been seriously taken up in Paris. A cow, it is said, will produce 100 pustules, which, at five francs each, will bring 500 francs, the cow suffering no deterioration in value. The practice is greatly recommended by the safety it ensures that no other contagion will be communicated along with the cow-pox. Smallpox is rather prevalent in and around Paris, and people are becoming anxious on the subject. It is recommended that the cow should be vaccinated by twelve or fifteen small punctures around the vulva, a part the animal cannot get at. The vesicles ripen about the eighth or tenth day. The lymph is too thick to be got into tubes, but must be taken on glass plates, which can be moistened when it is wanted. A good idea has

been started by one doctor, namely, that it will do just as well to drink the milk of an infected cow as to get vaccinated. The doctor has made the experiment. He vaccinated a cow on the udder, and got two good vesicles. He then gave the milk to two infants, and afterwards tried to vaccinate them, *but without success*, while a third infant, who had none of the milk, was at once acted upon by the same virus. He recommends that young ladies who are afraid of a lancet should drink a glass of the milk of an affected cow every three or four years to save them from the smallpox!!

Amount of Carbonic Acid in Expired Air.—Mr. W. F. Barrett, by an extremely delicate method, has lately ascertained the amount of carbonic acid in air expired from the lungs of the human subject, and he finds it to differ with the states of the system.

Physical analysis *before eating* . . .	gives	4	per cent.
Chemical analysis by Dr. Frankland	„	4·31	„
Physical analysis *after eating* . . .	„	4·66	„
Chemical analysis by Dr. Frankland	„	4·56	„
Physical analysis *after exercise* . .	„	5·33	„
Chemical analysis by Dr. Frankland	„	5·22	„

From some experiments instituted by us several years since, a somewhat ruder analysis, we fear, gave the amount of carbonic acid in the expired air from the horse to vary from 6 to 7 per cent.

Skeletons of Horses, etc., at Pompeii.—Mr. C. W. Russel, in the *Athenæum*, writing from Naples, states that among the recent discoveries at Pompeii is the skeleton of a horse, which, together with two other skeletons of horses found some years since, has been put together, and placed in one of the rooms of the museum at Naples. Mr. Russel had the curiosity to examine the teeth of the last-found skeleton, and ascertained that the animal was just five years old at the time of the destruction of the city. All the horses appear to have been of good shape, but small sized, and of a type still common in the south of Italy.

Among the still more remarkable discoveries, in the dwelling house of a baker upon the cooking-stove in the kitchen was found a stewpan full of ashes, having at the bottom an indurated mass. Of this latter Signor Fiorelli took a cast, which was an "exact fac-simile in bronze of a young pig, which was being stewed for the family dinner at the very moment when they were surprised by the stroke of doom."

Necessity of Ventilation.—From the report of Messrs. Hewlett, Stanley, and Reid, on the ventilation of the new barracks at Gravesend, it appears that the organic matters floating about in the air are both varied and numerous. The air being withdrawn by means of an aspirator, and passed through a solution of permanganate of potash, the precipitate was examined microscopically, and found to contain fragments of epithelium, pus-cells, pieces of cotton-fibre, shreds of wool, and large numbers of amorphous bodies. Dr. Parkes, in his remarks on these and other allied observations, points out that they put in a clearer light than before the necessity of ventilation, and the advantage of isolating patients, from whose bodies arise such quantities of organic particles. They would also seem likely to place on an experimental basis the doctrine of the transference of morbific agents from one person to another.

Salting of Animals whole.—Dr. Morgan, of Dublin, has proposed a plan for salting of animals whole, which is essentially as follows:—Immediately after being slaughtered a communication is made between the principal arteries of the animal and a reservoir of brine placed at a high level, the result of which is the diffusion of the salt through the meat by a process of injection. It is stated that in the course of ten minutes a whole ox can be thus preserved, at a cost of about sixpence-halfpenny.

Poison Plants of India.—Dr. James Irving states that the following plants are used for poisoning food in the north-western provinces of India:—*Datura fastuosa* and *alba*, *Aconitum ferox*, *Cannabis indica*, *Nerium Oleander*.

We are told that it is not uncommon for the natives to poison horses, for the sake of their skins, with croton seeds.

Glycerine a Preservative of Organic Substances.—M. de Marquay has found glycerine to be very efficient in the preservation of animal tissues, and Mr. C. R. C. Tichborne has ascertained it to be equally useful in preventing the decomposition of the delicate parts of vegetables. Further, he states, that it might be made available for extracting and preserving the aroma of flowers, leaves, &c.; it being only necessary to cover them with tolerably pure glycerine, after being closely pressed together in wide-mouthed bottles, or jars, and well corked. By distilling the expressed glycerine with water, the perfume is found to be equal to that obtained from recent flowers.

THE VETERINARIAN, APRIL 1, 1865.

Ne quid falsi dicere audeat, ne quid veri non audeat.—Cicero.

PROPOSED FORMATION OF A VETERINARY MEDICAL ASSOCIATION FOR THE WESTERN PART OF ENGLAND.

We are quite sure that our readers do not require from us any iteration of the sentiments we hold in reference to "Provincial Veterinary Medical Associations." We have ever given to them our most earnest and sincere encouragement and support, and shall continue so to do. We rejoice, moreover, to know that others are about to be formed, and if we have been gratified at the progress made by those already established, it affords us even more pleasure to refer to the propositions in the present number made by Messrs. Dyer and Bodington, that the West of England shall also possess its association or associations. A large field is at present unoccupied there; room enough perhaps for supporting two institutions of the kind.

But what enhances our gratification is the fact that it is a returning to the source whence the proposition for the formation of these societies first emanated. In the 28th volume of the *Veterinarian*, page 226, when we had just entered upon our editorial duties, a proposition was put forth by Mr. Warne Roddall, M.R.C.V.S., Plymouth, that Provincial Associations of Veterinary Surgeons should be established in every county in the United Kingdom. And we at once gave to the suggestion our warmest commendation. The subject was, however, allowed for a time to rest; at least we heard little or nothing about it. It was, as it would seem, only to acquire strength, for our friends in the north warmly took the matter up, and how they have progressed the pages of this journal bear abundant evidence. Surely no greater proof is wanted of the desirability of the thing than this success, and if we know aught of what the west is capable of doing, we do not think the members there will

be slack in following an example so nobly set. We must be content to allow those who have taken the initiative to meet when and where they may deem most fit, and to make the required preliminary arrangements. We feel convinced that to no better hands could this be entrusted. They have both experience and practical knowledge to throw into the scale, and where there is wisdom to guide, corresponding good must result. Our best wishes for their success is most cordially given, and our pages shall always be open to report their progress.

Extracts from British and Foreign Journals.

REPORT OF EXPERIMENTS MADE UNDER DIRECTION OF THE LORDS OF THE COUNCIL AS TO THE VACCINATION OF SHEEP, AND AS TO THE INFLUENCE OF SUCH VACCINATION IN PREVENTING SHEEP-POX.

By James F. Marson, Esq., F.R.C.S., Resident Surgeon of the Smallpox Hospital, and

Professor Simonds, of the Royal Veterinary College.

(*Continued from p.* 108.)

In taking leave of Mr. Overman's published statements of the utility of vaccination, we may remark that, although he ultimately admitted that several of his sheep did contract variola, he nevertheless endeavoured to show that the operation to which they had been subjected had mitigated the severity of the disease. This opinion is evidently based on an imperfect knowledge of the whole subject of vaccination, and in his particular case it possesses no value whatever. Notwithstanding this it is to be regretted that Mr. Overman should have refused some further counterproofs of inoculation and exposure being had recourse to, by sending some sheep to the Veterinary College, and also to the farm of his neighbour, Mr. Muskett, according to his promise.

We come now to the case of the sheep belonging to Mr. Hudson, of Castleacre, which were also operated upon in July, 1848, by the aforesaid Mr. Wells. These sheep, consisting of tups, ewes, and lambs, on being exposed to the infection of sheep-pox, about three weeks after the supposed

vaccination, took the disease. The malady was first noticed among the lambs, and from them it extended to the other sheep. Four days after the appearance of the sheep-pox, Mr. Hudson had 400 ewes, 40 crones, 10 rams, and 19 ram lambs inoculated. The operation was very badly and roughly performed, so much so that the virus took effect on only 186 of the animals.

On the sixteenth day succeeding the inoculation the animals not taking were re-inoculated, but even then many of them did not contract the infection, from the imperfect manner in which the operation was again performed. Under such circumstances, the natural and inoculated disease going on simultaneously, the ultimate loss proved very heavy, and brought great discredit on the system of inoculation for sheep-pox, more especially as the circumstance occurred in a flock the property of so well-known and distinguished an agriculturist. Many of the sheep whose lives were spared were rendered permanently lame from the extensive ulceration and sloughing which resulted from the roughly made punctures.

Without going into all the details of Mr. Wells' proceedings in the matter of the vaccination of sheep, we deem it necessary to quote some remarks, relating thereto, from two of Mr. Perry's letters to the *Norwich Mercury*, dated October 18 and November 1, 1848. "About the same time," he says, "that Mr. Overman's sheep were vaccinated, a friend of mine had his sheep *done by the same gentleman*, so that it is fair to presume that the operation was as skilfully performed in the one case as in the other. Six weeks after the operation, a rumour was widely spread that vaccination was inefficacious as a preventive of smallpox in sheep. This opinion was entertained by my friend, and consequently he had his sheep inoculated. It was only a small lot of five score, and, *perhaps*, the majority of the animals took the disease through this medium, but there were several that were not affected by the inoculation. Subsequently the smallpox broke out amongst these sheep in the natural form, and five of them died."

In his second letter Mr Perry observes, "I am not aware that there are more than three persons who have tried *these vaccinations* in my immediate neighbourhood, one I have already mentioned as having failed, and at that time I could say nothing of the other two. At the present moment, however, smallpox is taking its usual course in both these flocks also, not being at all checked in its virulence by the vaccination."

With reference to the same subject, Mr. R. Carter, V.S., of Swaffham, informed Mr. Simonds by letter, dated July 24, 1848, that "the farmers had *already* found that the sheep "readily took the smallpox after vaccination, and to lessen the fatality they were having recourse to inoculation." Mr. Carter further remarked that he had been called upon to inoculate many vaccinated sheep, and that they contracted the disease in the usual manner.

These details fully prove that the so-called "*West Norfolk Vaccinations*," to which so great an importance was attached by the public press, during the late outbreak of sheep-pox in Wiltshire, and chiefly in consequence of the letters which were published by well-known agriculturists, possess in truth no real value whatever in determining the important question of the protective influence of the vaccine disease upon sheep.

Indeed, as we have already shown, it cannot be said that the sheep, in Norfolk—with but very few exceptions—were vaccinated at all, nevertheless it became the more necessary that the full particulars should be recorded in a report of this description.

We proceed to relate the instances of *legitimate* vaccination of sheep in Norfolk. At a meeting of the Wayland Association held at Watton, October 26th, 1848, Mr. Rose, surgeon, of Swaffham, in alluding to the existence of the sheep-pox among the Norfolk flocks, said "that at the time smallpox in sheep first made its appearance in this county it took us all by surprise. No one knew what to do, and how exactly to proceed. Advice was solicited on all sides. In consequence of the disease being at Narford, Mr. Turner of Narborough asked my son to try vaccination upon a few of his sheep. He vaccinated three, and assured himself afterwards that they took the vaccination. These sheep subsequently contracted smallpox, and one of them died."

Mr. Smith, V.S., of Norwich, in a letter to the *Norfolk News*, in November, 1848, states, "On the 20th of October last I vaccinated carefully with lymph—taken from vesicles on children's arms on the 19th, and kindly furnished to me by two medical friends—ten ewes on a farm at Wroxham. It had, in every instance, but little or no effect, even simple punctures would have produced as much." Mr. Smith goes on to remark, that "Mr. George Taylor, surgeon, of Mattishall, had written to him as follows: 'About September 13th, 1848, I vaccinated ten sheep upon a farm at Bylaugh, with lymph taken not many days before from a good vesicle on an arm. On the same day, in the same place, and with some of the same lymph, I vaccinated a child; every puncture in the

child produced a healthy vesicle, but not a single puncture in the sheep had any effect, although each sheep was vaccinated in three or four places. All these sheep I inspected on the seventh day, the result being as I have stated above. They were then all vaccinated again with lymph taken but a few hours previously from an arm. A few days afterwards I again examined these sheep, but not a vesicle was to be found, there being no more irritation than a simple incised wound would have produced. I then vaccinated three or four others, but, as before, without producing any effect. I vaccinated the sheep very carefully, and the conviction left on my mind was that the disease was not to be conveyed from the child to the sheep.' "

In a second letter of Mr. Smith's to the same paper, dated December 7th, 1848, he observes that Mr. Joy, surgeon, of Northwold, had furnished him with the following facts:— "Immediately upon hearing that sheep-pox had reached this country, I determined on trying the value of vaccination, and therefore selected five sheep for experiments, viz., two rams, two ewes, and one lamb. A vesicle was formed by the evening of the fifth day after the operation, but the result was very unsatisfactory, as, instead of the areola spreading as it does in the human arm, on the sixth day, it, with the vesicle, began to diminish, and on the seventh it had wholly disappeared, leaving no eschar behind."

Mr. Joy also vaccinated several more sheep, at the request of some friends, and with a like result. He afterwards inoculated his own small flock of fourscore sheep, which did remarkably well, excepting two. The five vaccinated sheep, when subjected to inoculation, differed in no respect from the others, and consequently "my prior opinion," writes Mr. Joy, "was confirmed, that vaccination was of no avail."

(*To be continued.*)

INCREASE OF THE CONSUMPTION OF HORSEFLESH IN FRANCE.

The Paris correspondent of the *Daily Telegraph*, in commenting lately on various subjects, political, commercial, and social, as affecting France in particular, says—

"I must now return to a droll subject of food, which, in my idea, will require millions of oysters for sauce—horseflesh! The people are gone mad about it. I take the following from a provincial paper:—"Notwithstanding the jests of those who cannot resist the temptation of showing their wit against a truth, even at the risk of delaying its definitive triumph—'horse-laughers in this instance'—the question has advanced,

and there can be no longer any doubt that horseflesh is wholesome, agreeable to the taste, rich in nourishing properties, and destined to fill up a void in the food of the working classes of this country. France contains more than 3,000,000 horses. These animals are renewed every twelve or fifteen years, for after a time horses are no longer useful for work. The fifteeenth part of 3,000,000 is 200,000, and if we set aside 50,000 unfit for food from disease, there still remains 150,000 healthy animals, which would furnish 6,000,000 lbs. of food. That weight is equivalent to the meat furnished by 90,000 to 100,000 head of cattle. Therefore the question is of great economical importance. Horseflesh is sometimes offered for sale clandestinely at Paris, and very often eaten as *filet de bœuf aux champignons* in the Palais Royal, without the knowledge of the public. In Denmark it is publicly sold; and at Vienna there are seven special butcheries, where, in 1862, 1954 horses were retailed at an average price of 62f. There seems, therefore, to this country editor—who does not live in Paris—no reason why this meat should not be sold publicly in France, in shops set apart for that purpose, to the great advantage of the public, for the increasing requirements of which the production of meat is notoriously insufficient. I have quoted this at some length, because I think the question is interesting, and even perhaps important.

"That more fresh meat is required in Paris is I fancy a fact, for it is very dear; but how is horseflesh to bring down the market? Horses are terribly dear in France. You cannot feed the population on 'twos and threes,' to use racing phraseology—price would bar that; and I fancy 'the six-year-old and upwards' will be toughish food, even for the 'artisan,' who I see by the reports is to be the usual consumer of this unnatural aliment. Whilst horse-consuming societies are endeavouring to eat us out of horse and home, the Emperor's Government is doing its very best to keep the race in a state of gradual improvement. No less a sum than 1,724,245f. (£69,000) is devoted by Government to flat races, steeplechases, and trotting matches, whilst there are 105 'hippodromes,' that is, racecourses, in France."

We add to this the following, which, if true, will prove, we should imagine, a great drawback to the consumption of horseflesh. It is probable, however, that the matter is somewhat over-coloured, or surely we should have heard of it long before.

"There is one fact connected with the use of horseflesh as an article of human diet, which, with other considerations, is likely to interfere with its adoption. The Pampas Indians, who habitually live on mare's flesh, exhale a peculiarly disagreeable and even sickening odour. In the *saladeros* of Buenos Ayres and Monte Video the Indian labourers are subject to the same nauseous emanations. At Buenos Ayres, when Rosas returned from his expedition against the Pampas Indians in 1835, bringing with him several young captives; these children, who were most hospitably received, severely tried the endurance of their protectors by the smell of the wild horse which emanated from their persons for several months. The Argentine General Mansilla, well known for the elegance and distinction of his manners, having on one occasion requested a young Corrientine lady to dance with him, was pertinaciously refused, and when he urged her to assign a reason for this affront she at last said to the general, 'You smell like the Indians!' General Mansilla had that very day been making a repast of mare's flesh, not having been able to procure beef."

Translations and Reviews of Continental Veterinary Journals.

By W. Ernes, M.R.C.V.S., London.

"*Repertorium*," Stuttgart.

NOTES ON VETERINARY SUBJECTS IN LONDON.

By Professor Weiss, of the Veterinary School of Stuttgart.

(*Continued from* p. 185.)

The well-known establishment of Messrs. Field, father and son (Oxford Street), is not inferior either in grandeur or arrangements, and in many respects is superior, but, being more ancient, is not so elegant. The hospital stables are lighted from above, and there is room for eighty horses; but they have another place in the country, a few miles from London, where they can take in above a hundred horses. One guinea per week is paid per horse for his keep, exclusive of medicinal treatment. They keep ten horses for the service; the horse that takes out the medicine has to be shod every eight days. There is a well-arranged pharmacy, with several very good preparations. There is an old and renowned forge, in which about 300 horses are shod per week. They possess a spacious anatomical museum, composed almost exclusively of pathological specimens from their own practice. Messrs. Field have a very high reputation as veterinary surgeons, especially the senior. They also have a conveyance for sick horses.

M. Weiss met in the London streets horses of every breed, but he admired most those little ponies, trotting along with comparatively heavy loads behind them. He also admired the cab-horses, some of which were distinguished for their breed. He visited the great brewery of Barclay, Perkins, and Co., where he saw 160 colossal horses, amongst which were some seventeen to eighteen hands high, of corresponding size and beautiful proportions. M. Weiss also visited the Queen's stables, which he accurately describes; the number of horses, he says, is 160 to 170. The majority are carriage-horses, Yorkshire breed, and brown colour, and first-rate horses. In one stable there are twelve cream-coloured entire horses, tall, with very strong limbs; they have long manes and tails; in the choice of which, according to M. Weiss, more attention is paid to the colour than to the conformation. There are also twelve black entire horses, of the same size,

which have been bred at Hampton Court; they are only used on State occasions, when eight of them are put to the State carriage of the Queen, which was built in 1761; it is twenty-four feet long, eight broad, and twelve in height, entirely gilt, ornamented with rich sculptures and paintings by Cipriani. It weighs four tons, and cost about £8000. Among the three riding-horses of the Queen there is a gray, spotted, entire Arabian, twenty years old, of a very distinguished breed; it was a present to the Queen from an Eastern prince some years ago. Of the fine horses of the deceased Prince Consort none have been ridden since his death; they are simply exercised in hand during court mourning. There are about twenty-five saddle-horses for the young princes and the ladies in waiting, &c.

As to the objects of interest to the veterinary profession at the Exhibition, they were very scarce, and there was nothing by which he could increase his professional acquirements. There were numbers of horse-shoes from all countries—from the English colonies, Turkey, Asia Minor, Italy, France, Germany, &c. Surgical instruments from M. Méricart, of Paris; and the fine anatomical plastique preparations of Dr. Auzoux. These were nearly all the objects of interest to veterinary surgeons. M. Weiss did not stop to examine the great number of secret remedies against all sorts of maladies and ills of our domestic animals which professed to be infallible in their cures. The London Exhibition would have been incomplete if the quacks who fabricate these marvellous nostrums had failed to be at the rendezvous.

LANCASHIRE VETERINARY MEDICAL ASSOCIATION.

OFFICIAL REPORT.

The members of the Lancashire Veterinary Medical Association held their tenth meeting at the Brunswick Hotel, Piccadilly, Manchester, on the evening of the 1st of March, 1865.

The President in the chair.

The President opened the meeting with a short address, and afterwards read a letter from the Committee of the Royal Institution, in answer to a communication from him (the President), requesting the said committee to allow the meetings of the above Association to be held in the theatre of the institution, and it was thought this permission would be obtained before the next meeting.

The President also read a letter from the Dean of Manchester promising to do all he could to assist in promoting the scheme.

A unanimous vote of thanks was accorded to Mr. T. Greaves for his very handsome presents to the Association, already reported.

The following gentlemen were then elected members of the Association:

Mr. A. Lawson,	proposed by	Mr. P. Taylor,	seconded by	Mr. T. Greaves.
„ Woods	„	„ T. Greaves	„	„ Haycock.
„ Billington	„	„ Gibson	„	„ Dixon.
„ Paulden	„	„ T. Greaves	„	„ T. Taylor.
„ Buckley	„	„ ditto	„	„ ditto.
„ A. Challenor	„	„ T. Taylor	„	„ T. Greaves.

Mr. Heap was nominated by Mr. T. Greaves.

It was then proposed by the President, that the rules should be read; but Mr. Haycock moved an amendment, to the effect that they should not be read, as there would be no time left for discussion. Upon this being put to the meeting, the amendment was carried by a large majority.

Mr. T. Greaves intimated his intention of proposing an amendment to Rule 15th at the next meeting, and *Mr. Haycock* an amendment to the preamble.

The Secretary then read the minutes of the last meeting, which being duly confirmed, the President called upon Mr. Brooks for his "Essay on Laminitis." The subject was very practically handled, and elicited a warm discussion, which principally bore on the relation of laminitis to rheumatism. Several members entered into the discussion, and Mr. T. Greaves gave his opinion on the subject. After which, the time of meeting being expired, the President proposed a vote of thanks to Mr. Brooks for his paper, which was seconded by Mr. T. Greaves and unanimously accorded. The meeting then terminated, Mr. Greaves having been previously asked for a paper on the prevailing influenza for the next meeting by the whole of the gentlemen present, which he kindly assented to.

A. L. Gibson, *Secretary.*

Essay on Laminitis by James Brooks, M.R.C.V.S., *Pilkington.*

"Persevere against discouragement."

Mr. President and Gentlemen,—The subject I have to bring before you this evening, viz., *Laminitis and its accompanying symptomatic fever*, is one of the most important that can be offered for the consideration of our profession. It is a disease so dreadful in its manifestations, and attended with such pain and excessive distress to our poor patient, as cannot fail to excite compassion for him from all who witness a case of it. I assure you that I have frequently been so affected, that I could not leave my distressed patient until

I was satisfied that the utmost had been done, so far as professional knowledge lay within my reach, to relieve him from some portion, at least, of his intense sufferings; indeed, there are few diseases that afflict our patients which have such tendency to cause more frequent inquiries from our clients and their friends.

The first and most obvious requisite for a practitioner is to possess the ability to diagnose a disease when he sees it, so as to distinguish it from others manifesting similar symptoms, and thus to foresee its probable phases and results. The treatment he adopts will be judicious in proportion to the readiness with which he recognises, and the accuracy with which he discriminates diseases, and it will be either rational or empirical according as he understands or not their real nature and true cause; and it is in the investigation of the nature and cause of this disease that I earnestly desire you this evening to co-operate with me. No man, whatever may be his pursuits, deserves the name of a *practical* man, whose knowledge and resources are limited by the experienceof his predecessors in a similar walk of life, or who cannot or dare not experiment or reason on a new form for himself. In all professions, and in none more so than in the practice of medicine, novel events, remarkable phases, and rare combinations, are continually presenting themselves, which can only be understood and successfully encountered by the aid of general principles. Hence the reason why every successful practitioner should have a knowledge of pathology and therapeutics, which are to guide him in treating cases of disease or complications he has not previously experienced. For instance, let us observe the small strangulated hæmorrhoid, or pile, in the human subject. Look at the intense suffering, the excruciating pain endured, the sympathetic and symptomatic disturbance in the system, nay, even the complete prostration with which the most powerful man is overcome when suffering from acute inflammation attendant upon an external pile; arising from the circumstances that the lower extremity of the rectum is so vascular, that the veins possess no valves, and that this region of the human body is periodically subject to mechanical disturbance. It is not a matter of surprise that hæmorrhoids, which are composed of structure in which blood-vessels are a main element, occur so frequently as they do. Here we clearly see that with increased vascularity we have greater tendency to inflammation and pain when an abnormal or morbid condition of tissue is by any means produced. From the peculiar situation of the sensitive laminæ, and their being so highly vascular and

abundant in nervous texture, the disease called laminitis, which has its seat in the reticular tissue that envelopes the coffin bone, consists, I conceive, primarily in a congestion of blood, which is soon followed by the most intense inflammation; these laminæ being situated, as I may say, in a blacksmith's vice betwixt two hard substances, namely, the coffin bone and the hoof, high congestive inflammation is thereby produced, and the most violent pain is the consequence of this abnormal condition of the parts, which soon produces all the phenomena of inflammation by strangulation.

But, gentlemen, need I take up the whole of your time this evening in bringing before your notice a subject upon which so much has been written by our late and eminently distinguished friend Mr. Percivall, in his 'Hippopathology,' which constitutes a library of itself, where he has devoted much time, and carefully penned down his own and other eminent authors' views? I desire to direct your attention to it in order that you may pereeive for yourselves his able and excellent remarks, which ofttimes have afforded me both profit and pleasure. I am free to confess that he has been my pioneer for a lengthened period. But lately we have had two other gentlemen who have, in the most friendly manner, given us their ideas on this important subject,—I refer to Mr. Williams, of Bradford, and Mr. Thomas Greaves, of Manchester. I would commend to your notice the controversy that has been carried on between them within these last few months, and which will doubtless do much to convince you and every other observer that they are no *sciolists*, but men well matured and well grounded in the science of disease.

Laminitis is of two specific kinds, which we may designate natural and unnatural.

1st. Natural laminitis is mostly found in horses of a low breed and heavy and corpulent in body, such as draught-horses of various kinds, and it arises doubtless from constitutional causes.

2ndly. Unnatural laminitis, or the artificial phase of this terrible disease, is most frequently met with in light bred animals, and no doubt is the result of their endeavour to resist the violence occasioned by over exertion on hard roads, and by the exhaustion produced by rapid driving and other deleterious causes, such as being suddenly called upon to perform long journeys, overloading or gorging the stomach with food, eating large quantities of wheat, or feeding upon new oats, inasmuch as the sympathy between the stomach, the alimentary canal, and the skin, is of such a character,

that if we regard the hoofs as a continuation of the common integuments, this is not to be wondered at. There is one cause, however, so predominant and influential in its character that ought never to be lost sight of, which is *work*, or what may be construed into violence done to the feet. For instance, a horse with high stamping action, going any great distance, or for any length of time, upon a macadamised road, or hard pavement of any kind whatever, will be a very likely subject for an attack of this disease; particularly if it has been idle, or at rest, or is unseasoned, and is suddenly and at once put to do the work of this character.

Of the former character or type of this disease, I have had no less than eight cases that have come under my care during the last three years; some of the subjects of which have not been out of the stable or box for weeks, nay, for months, and the remainder have only followed their ordinary employment, yet all have been attacked with symptoms equally violent with the most virulent cases that have ever come under my notice. This is one among the many proofs of the justness of my distinction between the natural and unnatural, or artificial, phases of laminitis, and which cannot be accounted for by the general and popular received theory that this disease is the offspring of violence or overwork. Surely, then, my theory is not ill-founded, for there must be some occult or mysterious cause for this disease presenting itself under the peculiar circumstances I have now related.

What, I have frequently asked myself, is this hidden or undiscovered cause? Is it idiosyncrasy, or some peculiar element in the system of the patient? Is it cachexia, or a bad habit of body? And when ruminating upon the subject I have frequently had brought to my recollection the remarks made by Professor Spooner upon this form of disease, during the period when I was attending his lectures, which were to the effect that "laminitis," to all intents and purposes, belongs to the rheumatic class.

And more lately, on perusing an excellent paper on this subject, the production, in 1855, of our esteemed friend, Mr. Greaves, I find two right words used in their right places in reference to the active cause of this disease, viz., the "Igneous Element." I feel quite satisfied and fully convinced that this expression, "Igneous Element," is the very essence of this lamentable affliction to which the equine race is subject, lurking as it does in the system, waiting only for some exciting circumstance to rouse it into activity.

Just allow me, gentlemen, to call your attention to the rheumatic fever in the human subject. There we have

symptoms somewhat similar to those which we see in the laminitic,—acute pain; extreme tenderness, attended with great constitutional disturbance; much restlessness; intense thirst and loss of appetite; the pulse often up to 120, full, hard, and jerking; the bowels obstinately costive; the urine scanty and high coloured, with a strong acid reaction; and the skin often bathed in a profuse, strong, sour-smelling perspiration, which, however, affords no relief. It is an established opinion with the medical profession that rheumatism is essentially a blood disease, and that the poison which is accumulated in it is *lactic acid*. It also contains a large excess of fibrin. The urine is excessively acid and high-coloured, and contains much uric acid, while the remedy resorted to, since the system is saturated with acids, as the most rational and the most successful, is the employment of alkalies in the form of bicarbonate of potassa, or the nitrate, bitartrate, or acetate.

I beg leave to suggest to our President that three or four of our Manchester practitioners, when they have under their care a patient or patients labouring under this disease, should collect some urine, and also some of the blood, for the purpose of having it analysed by some eminent analytical chemist at the expense of this association, and I have no doubt but that we shall obtain some peculiar poison or effete matter that has been secreted in the circulatory system; and doubtless this state of the blood will present an interesting subject for investigation.

Symptoms.—The horse stands in a fixed position, and if the disease is confined to the fore-feet, the symptoms are of that peculiar character that they can hardly, by any person of any experience, be mistaken, described by the expression, "All of a heap." The pulse is full, frequent, and remarkably hard; the respiration seems to sympathise with the pulse; the animal places his hind legs under him in order to take the weight of his body off his fore-feet; he groans and moans from the severity of the pain, which in some extreme cases completely prostrates him; if forced to step forward he most unwillingly makes an effort to do so, and his method of accomplishing it is expressive of no disease save laminitis; the feet are hot and painful, if one foot be held up, which in some cases it is very difficult to do, he can scarcely stand upon the other; he does not like to get up when down, and if compelled, he does so with great difficulty, and he is very unwilling to move from one place to another. Throbbing of the pastern arteries is another well-marked symptom. The mouth is parched, his very breath is hot, the

mucous membranes are vascular and scarlet from irritation, parts of his body are in a state of tremor, and he is continually changing the position of his feet in search of relief. The pain is explained by the larger supply of blood to the nerves of the part, combined with the pressure of the surrounding texture upon them. It is accordingly most severe when the surrounding textures are most unyielding. With increased heat of surface, great thirst, dry skin, scanty and high-coloured urine, we have the most obstinate and sluggish state of the bowels present.

Treatment.

Different modes of treatment have been recommended and advocated on general physiological principles. The functions of the alimentary canal are so tardily carried on that we cannot insure the operation of a purge under twenty-four hours. There is no animal but the horse in which acute disease makes such sad havoc in so short a time. Empty his stomach we cannot with an emetic, nor can we purge in a few hours; and well knowing the obstinacy of the bowels in this disease our measures must be prompt to act, and decisive when they do act; for the grand purpose, if the practitioner desires to be successful, must be to conquer the disease by *resolution*, as every other mode of termination is unfavorable, if not destructive. Consequently, to bring about this issue is the aim and desire of every one who has to treat this malady, and as the nature of this disease, its seat, and the disorganization which it produces, are well known, this result is not so difficult of accomplishment as it may appear at first sight; in proof of which I beg to offer to your notice the treatment I have found most successful during a lengthened period of practice. It is as follows:—Bleeding from the coronary plexus.—Tincture of Aconite ♏x, given, every two or three hours, in half a pint of cold water; the administration of a gentle purge; Nitrate of Potassa ʒij, given in cold water every time the patient drinks, day and night; also new yeast, about half a pound, two or three times a day.

Externally: Cold water poured on the feet with great force every hour or two, day and night.

Bleeding.

In inflammation there is diminished action, that is, diminished contractility of the small arteries, with increased action of the heart, and the two together keep up that dilated condition of the small vessels, which is the essence of inflammation.

It is obvious that there are two ways by which these minute vessels may be restored to their healthy degree of contraction. The first is by lessening the quantity of blood to the part, and the second by increasing their contractility. In most acute inflammations both these remedies are required. If the inflammation be recent, the small vessels may recover themselves, and if once relieved from the undue quantity sent to them by the heart, the abstracting of blood, or the use of depressing remedies will suffice.

But if inflammation be chronic, the small vessels may have so lost their contractility as not to recover themselves though the blood circulates through them in diminished quantity; and in this case we must use such remedies as restore the lost contractility of the vessels, and precisely the same treatment is required in that state to which we give the name of congestion. The treatment of inflammation, then, is twofold: It consists in diminishing the quantity of blood sent out by the heart on one hand, and in restoring the lost contractility of the small vessels on the other. As the increased action of the heart occurs only in the acute form of inflammation, it is in that form alone that general remedies are necessary. These remedies are bloodletting, aided in certain cases by active purgatives and depressants. Bleeding alone, even though often repeated, will not suffice to subdue the inflammation, for each bleeding is followed by reaction, and that reaction establishes the inflammation. By combining depletion with depressing remedies, we save blood and avert chronic disease. The great principle to be observed in the treatment of acute inflammation is to subdue it at once, so as not to allow reaction, and to give the small vessels time to contract to their usual size.

Aconite.

Very little has been said or written on the properties of aconite. If given in ℿx doses, in half a pint of water, it diminishes vascular and nervous excitement. I have observed after two or three doses that my patient has laid down and been disposed to sleep, which certainly appears to me to secure the desideratum so strongly urged by our friend Mr. Greaves in his remarks on this disease, viz., to get the weight of the body off the feet. I think that object is obtained here. Large doses produce alarming symptoms and considerable excitement; but in small doses I have often seen the sedative effect almost instantaneous. I well recollect whilst attending the lectures of Professor Spooner, that he said, when speaking on sedatives, there was none like bella-

donna, for you had two objects in view in administering it; it was the best sedative, and at the same time a laxative, which power no other sedative agent possessed. I hesitate not to assert that aconite given with caution in small doses, and well diluted, has in my experience proved the best sedative we have, and stands high as a diuretic.

Nitrate of Potassa.

If this be given repeatedly in the drink-water, I believe it to possess the property of destroying or neutralizing certain morbid poisons existing in the blood, as well as, in a less marked manner, to have the power of checking inflammation; which results may be attributed to its well known property of rendering the fibrine of the blood more soluble.

Cold Applications.

Cold water, according to the degree and manner of its application acts in very different ways. Its general effects on the circulation depend upon its intensity; but when, as in this instance, the feet are hot and dry, it reduces the temperature, lowers the circulation, soothes the nervous system, diminishes the extreme sensibility, and restores the contractility of the capillary vessels, thereby preventing further effusion, and allowing the absorbent vessels to remove any fluid which may have been thrown out.

Dietetics.

In this disease, as the functions of the stomach and digestive organs are either primarily or sympathetically impaired, and the assimilation of nutriment consequently very feeble, it becomes a necessity for the practitioner to supply such concentrated forms of nutrition as will be most certainly and readily absorbed by the disordered system. I have found these to be, amongst others, two eggs given every two or three hours, day and night, in a cupful of cold water, until the fever abates, after which give small bran mashes, and raw Swede turnips, or in summer green food in small quantities, and thoroughly to eradicate the disease; along with the change of diet there should be also secured for the patient a change of locality.

Now, gentlemen, having very briefly laid before you a meagre outline of the results of my experience in the treatment of this fearful disease, I earnestly entreat you neither to discard it at once, because at the first blush it does not appear to follow in the time-honoured and beaten track of our craft, nor to ignore it because the appliances and mode of treatment are novel, and perchance by you untried.

Every discovery in science and art must, some time or the other, be an innovation, and necessarily will be regarded by those who are habituated to the old and long-recognised system of things with suspicion and doubt. But if its pretensions be not investigated, nor its merits tested, there is at once an end of all progress. Invention and new appliances of long-known powers, is the distinguishing feature of our age in every phase of life. Why, then, should our profession be an exception? It must not, it cannot, it shall not be! We may be as sceptical as we choose, and as conservative as we like, but truth is an ever expanding light, and will shine over our path whether we will walk in it or not. And if we fail, being weak sighted, or so blind as not to appreciate its life-giving and expansive powers, other minds and geniuses less prejudiced, will, by experiments gain experience, and by experience succeed in effecting marvels which might have been our achievements if we had been more progressive. Permit me, therefore, gentlemen, to urge upon you the necessity of a careful investigation into the facts now summarily brought before your notice, and let me induce you to ascertain for yourselves, by actual and careful experiment, the advantage, or otherwise, of the several means which have been recommended as curative agents in this disease. And I feel confident that if care be taken in the administration of proper doses, and also in a careful diagnosis of the varied forms of this disease, that a new era in our profession will have dawned upon us.

If I have done ought to aid this, my object will be attained, and my labour prove not in vain. And if you prove that my statements are not fallacious and my reasoning is correct, then shall I be far more benefited by the result of your experience than I could possibly ever have been by my own unaided observations. Let each work with the other, and all combine for the public good, and greater usefulness to man and beast will be the consequence of this conjoint action.

Mr. Greaves's *Observations.*

As it is known to most of you that I have written upon this subject many years ago, and again lately, and that I entertain opinions upon it which differ from those generally received, it is reasonable to suppose that you will expect me, on the present occasion, to give a reason why I entertain these views. Veterinary surgeons, as a rule, do not publish their views to the world until they have carefully studied the subject they are writing upon; now I have given to this

question my best attention for thirty years, having been in constant daily occupation during that period, in a not inconsiderable practice. I have devoted much of my time in the sick-box by the side of my suffering patient, have watched closely the progress of the disease, have consulted every author upon the subject, and meditated upon it for whole nights without a moment's sleep, night after night; and the conclusion I have come to is, that the disease called laminitis lacks several essential particulars or conditions which are ever present in acute inflammation.

The difference between my opinion, and that generally received, is, that the one ascribes it to acute inflammatory action affecting primarily, if not solely, the laminal tissues, whereas I consider that the pain emanates from the interior of the coffin-bone and the dense nervous textures which invest that bone; that the laminal tissues are only secondarily affected; they are simply implicated, or involved, in the general suffering; and that the affection partakes much more of, and would appear in many cases to be referable to, hereditary causes of a rheumatic type, or protracted cramp, than actual inflammation.

I base my opinion upon two points mainly; the first is, that it is contrary to all experience that intense inflammatory action can be developed instantaneously, as laminitis can be, and often is. Now, in inflammation proper, there must exist certain phenomena. You may search throughout all human and veterinary records, and you will search in vain, for a single example of true inflammation being fully developed instantaneously. Spasm sometimes attacks with intensity, but always suddenly; inflammation never. Multitudes of examples might be adduced as illustrations of this position; therefore, I say, to call this instantaneous pain in the feet inflammation, whether that pain is the result of metastasis, or from whatever cause it may be, and however intense it may be for the time being, is, I contend, calling it by an incorrect term. Acute founder, or fever in the feet, is an infinitely more proper term; or even poditis, Professor Dick's term, than laminitis.

The second point from which I draw my inference is, that the effects which we know must follow protracted intense inflammation do not attend or follow laminitis. If severe and protracted laminitis be true inflammation, then suppuration, destruction of tissue, gangrene, and decay of laminal tissue must follow as an inevitable and unavoidable consequence. There is no plan of treatment you could adopt that could possibly prevent it. It must unquestionably be at-

tended by the same laws, and be followed by the same results which inseparably belong to inflammation, but which result *we never have* in laminitis, however intense and protracted the pain may have been. I give this as my deliberate opinion, after much serious and earnest consideration. I am well aware that authors and lecturers teach us that spasm can exist only where there is muscular fibre. Of this I am not so very sure; but of one thing I am convinced, that an intense pain may be instantaneously developed, in which inflammation, as at present understood, is not an element, and where muscular fibre does not exist—at least not that we are aware of. I look upon what is generally understood by the term laminitis to be an affection of the feet hitherto undefined; a condition yet to be ascertained. It has no name in our nomenclature. I believe it to affect, primarily, the cellular membrane and nerve-fibre which enters into the composition of the internal structure of the bone and its dense coverings; that the affection is dependent upon the feet and the system generally being in a peculiar condition favorable to the disease at the time the attack takes place. A wondrous sympathy is developed by community of tissue. There may be a preponderance of lactic acid in the blood, or some other morbid, irritable state of body may exist; or a preponderance of phosphate of lime, or animal matter, in the bone itself, and this may have been going on for some time before, and preparatory to, the acute attack. An element is then generated or roused in the system—call it igneous element, or calorescence—for a moment it poises itself, and then it is irresistably attached to these tissues.

> "The obedient steel with living instinct moves,
> And veers for ever to the pole it loves."

It may be something of the nature of a positive and negative electrical state. A current is transmitted through the electrical wires which creates an incipient tumult, or local irritation, in the bone, and which is attended with instant and intense suffering: I use the term electrical, it being a definition the nearest in approach to what I mean. I am anxious to investigate this question as closely as I can, for I am persuaded the time will come when it will be found that this is not merely speculation. I will advance some illustrations, as practical proofs of this nerve-force. In forty-nine cases out of fifty where neurotomy has been performed for chronic lameness, say navicular disease, the operation may be performed with impunity, and unless some puncture or bruise of the sensitive parts takes place there is no fear of

sloughing of the hoofs. But what is the effect if you operate whilst the foot is under this electrical influence? I beg to call your particular attention to this point, since I have taken great pains to clear it up. Whether the case be one of old standing, or recent laminitis, you will find that the adhesion or bond of union between the sensitive and insensitive laminæ is immediately destroyed. After the operation, these laminæ appear to quit, or leave each other, and become detached, as if an electric affinity had been suddenly withdrawn, and in a few days the hoof slips off; yet the sensitive laminæ continue alive and vascular during this process. Perhaps you are ready to reply,—This can be easily explained, on the principle that the horse, experiencing an instant relief from all pain, places the whole of his weight upon his feet, and the attachment between the laminæ having become greatly weakened by recent acute disease at once yields, so that the separation is the result of ruptured and torn attachments. But I am convinced this is not so; their separation is dependent upon and is the result of sheer inability to hold together, the cohesive affinity or mystic power which held their separated edges together before no longer exists. Now this is a fact—what is the deduction? Further, if you fire a horse's feet, or blister a horse's feet severely after unnerving, you will have deep sloughing, and a hundred to one but you have sloughing of the hoofs also. I have witnessed this phenomenon over and over again, and I again ask, what is the deduction? It appears to me that it is dependent upon some agent or element analogous to, if not identical in principle with, the disconnecting of the conductor in an electrical machine. I am convinced of the existence of this element in the animal economy, and that it plays an important part in the functions of vitality. I have met with men who appear unaccustomed to inductive reasoning, who seem incapable of deep, concentrated thought, for five consecutive minutes; such prefer to pooh! pooh! this idea rather than examine it. They have never examined the cause of animal heat, nor mastered the problem how fever heat is generated, or what the increase in temperature under inflammation is dependent upon. They may tell me it is dependent upon chemical action, or combustion in the capillaries and air-cells, but they seem unaware that some of the most profound thinkers of the present day have, during moments of their clearest and most lucid investigations, caught a glimpse of the fact that there is another element existing in the production of this phenomenon, an element apart from and wholly independent of this combustion theory.

But what does practice teach us? Upon this point I wish to address you as practical and scientific men. What conclusions can we arrive at, when we find one eminent man asseverate that his success in these cases is attributable to prompt and effectual bloodletting, and that operation being performed over and over again. Another, equally as eminent a practitioner, and of even longer experience, asserts that his success is referable to never bleeding at all, even in the worst of cases. Now, gentlemen, we are dealing with one of those questions in which both cannot be right. Again, we find many eminent practitioners strongly advocate the removal, at once, of all weight from off the parts, and placing the laminæ and feet in a state of complete rest. This method is prompted, to all appearance, by scientific and humane considerations; but we find other practitioners, equally eminent, as strongly advocate thin-heeled shoes, and compulsory exertion; and we are assured that both these systems are attended with more or less success. But, again we are dealing with one of those questions in which both cannot be right. Again, I ask the members to what do they attribute the cause of the throbbing of the plantar arteries in laminitis? They answer me at once, and unhesitatingly, "It is in consequence of the blood meeting with an obstruction in its transit through the foot." I ask the same gentlemen, to what they attribute the cause of the extremely small, feeble pulse in influenza? They answer at once, and unhesitatingly, "To the general congestion of the capillary system." Here, again, we are confronted with an incongruity. We are dealing with one of those questions in which both cannot be right. And what a labyrinth we get into if we dare to deviate from the trodden path, and ascertain wherein the truth lies. The fact is, we may depend upon it, that in many of these cases, as in other diseases, nature has been the grand restorer; that she has very frequently had to work the cure single handed, if not in the very face of difficulties which our limited knowledge has been unwittingly placing in her way. I considered it would be a burlesque upon common sense, it would be stultifying of true principles, to admit that the very opposite plans of treatment are producing the same effect. What does every-day experience teach us? It teaches us this lesson, at all events, that we may bleed in severe cases of laminitis to syncope, if we choose, and, in half an hour after that bleeding, the artery is throbbing again as hard as before. We may bleed again and again, and yet again, draining the system to exhaustion, at a fearful expense of vitality, but the artery is rebellious still. Now I believe this state of things is not dependent

upon congestion or inflammation at all. I do not believe there is a drop more blood sent to the feet, in laminitis, than there is at any other time, and further, that the throbbing of the artery is solely and entirely referable to a peculiar action in the artery itself, and it receives its stimulus from the peculiar electrical condition of the part. Some cases in which I have bled most promptly and effectually, have done the worst; and others, in which I have not bled at all, have recovered. The exudation or effusion which occasionally takes place in the sole of the foot I consider of very light importance.

Post-mortem examinations have led me to the conclusion that this disease partakes of the character of rheumatism; that it is precisely similar in its nature to that troublesome and most painful inflammatory affection which occasionally attacks the white fibrous tissues behind the fetlocks. That eminent physiologist, Professor Spooner, does not believe it to be inflammation. Professor Barlow, who was one of the brightest ornaments in the profession in his day, considered it community of disease through community of tissue. But I have a strong faith that, as science advances, and the true physiology of this affection becomes better understood, it will be found that the true pathognomony and cure of this disease will differ, in many essential particulars, from the methods hitherto adopted; that it will be something simple but decisive.

In reply to several questions put by *Mr. John Greames*, of Altrincham, as to what plan of treatment he most recommended, Mr. Greaves said,—In all severe cases he strongly advocated prompt and copious bleeding from the arm, giving mild doses of opening medicine, the taking off the shoes at once, and leaving them off; but do not touch the soles; put the feet in poultices, and allow a large quantity of soft litter to remain underneath the feet. If there is much lameness, by all means throw the animal down at the first visit. This is easily managed when you have got into the knack of doing it and the horse comprehends what you are about to do. You may bleed in the sole (if properly done) with impunity, and often with much benefit. As to after-treatment, give Nitrate Potass. ʒiiij, with Ext. Belladonna ʒij, twice a-day; or, Bicarbonate Potass. ʒiiij, twice a-day, for some time; or, Fleming's Tinct. Aconite, in ten-drop doses, every six hours. But he confessed he had but little faith in any known medicine, as after-treatment, in changing the natural tendency in the system if an hereditary predisposition existed in the constitution.

NORTH OF ENGLAND VETERINARY MEDICAL ASSOCIATION.

INFLUENZA;

Being the substance of a Paper read before the North of England Veterinary Medical Association, at the Annual Meeting, January 20th, 1865, by the Hon. Sec., Mr. G. Armatage, V.S. *to* Right Hon. the Earl Vane.

A Protean disease! Such is the term employed to denote the character of that affection usually, and for a considerable number of years past, known by the title of "Influenza," an Italian word signifying *Influence.*

In whatever light the tendencies of our veterinary medical associations may be viewed, no higher standard of efficiency and usefulness can be claimed for it than, under its present constitution, the bringing together of the members of one profession, men almost of every shade of opinion, all uniting with one common impulse, energy, and design, to fathom the impenetrable depths and mysteries of such diseases as that I propose to illustrate for present consideration; and no occupation can be more ennobling to any community, that shall undertake such pursuits in which mankind in general shall reap a corresponding share of the resulting advantages and reward. A long pull, a strong pull, and a pull altogether, and we reach the haven of our desire.

It is not my intention to occupy your time with any lengthened critical disquisition on the history and ravages of influenza as it has occurred one hundred years ago; suffice it then to state, that the disease has occurred with more or less malignancy as early as 1733, and continued at intervals of longer or shorter duration up to the present time. For a complete description of these outbreaks from the time above named to 1840, I must refer you to the fifth and ninth volumes of the *Veterinarian*, and the 'Treatise on Influenza' by Mr. W. C. Spooner, M.R.C.V.S., Southampton.

For the past thirty years we may trace its destructive effects upon our horses—cattle and sheep even in some instances not escaping—at one time assuming the mild form of a catarrhal affection, terminating in others in typhoid pneumonia, pneumo-enteric, or malignant pustular and gangrenous disease; hence the denomination "Protean disease." By many writers it appears under the ambiguous title of "Epidemic catarrh;" and from its virulence at times, and under particular circumstances, "Malignant epidemic." With the exception of the character as signified by such terms, English veterinary authors have hitherto been comparatively silent with regard to this disease, or otherwise have not given to it that important place which its nature and tendencies call for.

Percival, who left the affection altogether unnoticed in his lectures,

treats of it in one part of his work on 'Hippopathology,' as "Bronchitis, or Influenza;" and under the head of fevers in vol. i, gives it a place under the recognised title; but from the short account there given, extending over six and a half pages, while thirteen and a half are devoted to the consideration of "Strangles" immediately following, a disease by no means considered a fatal one, we may reasonably imagine that the specific characters attributed to it in these days had not then become permanently recognised.

Youatt calls it "Catarrhal fever,—distemper among horses and cattle;" and with "White," the writer on cattle pathology, confounds "Epidemic catarrh" in the bovine species with "Murrain or vesicular epizootic." "Blaine" speaks of the "Epidemic catarrh" of horses and cattle, but appears to have noticed one form only of the complaint.

Our Continental brethren, who have had a full share of its ravages, appear not to have been so well satisfied with the term as ourselves, and have described several forms.

There are several points with regard to this affection which I wish to adduce for consideration, reserving others of a minor character for being dealt with in the discussion which is to follow:

1st. What is the nature of influenza?

2nd. What are the causes—proximate, remote?

3rd. What is the treatment necessarily indicated by these considerations?

1st, then,—the nature of influenza?

Professor Hering enumerates three distinct forms:—1st. The catarrho-rheumatic; 2nd. Gastric or bilious rheumatic; and 3rd. The gastro-erysipelatous.

In our own country, however, we have not been able to draw the line of demarcation so closely—symptoms which constitute the whole being more or less mixed up in each attack, though differences have been noted of various outbreaks which characterise the affection as partaking of special predominating tendencies.

During the autumn and winter of 1854, and spring of the following year, a great number of cases came under my observation and treatment, exhibiting all the characters of a gastro-rheumatic nature, extreme cases only partaking of the pneumonic complications, for an account of which I refer you to an article furnished by me to the *Veterinarian* in July, 1856. In the January number of that journal for 1856, an account of the same affection is given by Mr. B. Cartledge; and further observations on influenza noted by myself, in the March and April numbers for that year, which specify the particular symptoms demonstrative of the disease. Subsequently to the publication of these memoirs, viz., in the following winter, and spring of 1857, the same disease exhibited ophthalmic and erysipelatous complications, which proved in most cases of a very troublesome character.

Percival, at page 147, vol. i, of the work already referred to, considers this malady *specific* in its nature; "That is," says he, "a

disease of a peculiar kind," as deduced from the facts that, "1st. It breaks out at particular seasons, raging more in some localities than in others. 2nd. Because it is less under the power of remedies than common fever. 3rd. Because of its variety of combinations, which removes it wholly from simple disease."

The term specific as applied to influenza appears to me to consist principally in the strange tendency or predisposition towards a rapid and early appearance of debility, accompanied by a strangely peculiar sensitiveness to certain medicaments, while to others the system is altogether incapable of response; and even with regard to these, certain stages of the affection have been known to effect a complete reversion of the phenomena usually attendant upon their administration.

That excessive prostration of all vital powers which so rapidly follows upon the track of the proximate symptoms, evidently arises from the arrest placed at such an early period upon the organs of assimilation, and their concomitant effects on the action of the capillaries.

Nutrition is thus absolutely wanting, and materials of a highly elaborate character which should be formed, specially adapted to the maintenance of those functions essential to life—the nervous system—are scantily developed, and are at best but a most inferior production as far as purity is concerned; this in turn failing to supply the requisite demands of organs dependent on the sensorium for all that constitutes action, that great distributor gives as it receives—enfeebled life—receiving less and giving less—its own share contributing in no small degree to its special and perfect destruction.

Vascular engorgement and its inevitable result, serous effusion through the dilated, stretched, and thinned coats of blood-vessels lacking their proper stimulus.

I look upon influenza as a disease induced in the "appropriative" and eliminative systems—disease of those wonderfully elaborate structures which are occupied in the production and appropriation of nervous energy, animal heat, &c., and perpetuation of those forces so essential to the whole which we denominate vital, and also those which are delegated to the equally necessary and important office of secernation.

Can we wonder, then, that nervous power should decline—that animal heat should be no longer formed, when materials for their propagation and support are not furnished?

Can we feel surprised that blood should become impure, when organs for its purification, by separating from it the unsound and deleterious elements, are denied the power of action, nervous and structural.

Disease of these minute structures I consider to be caused by a morbid ferment introduced within the circulatory system, by which that vital force—catalysis—is more or less withdrawn, and hence we have impeded circulation throughout the whole capillary system, vascular engorgement, suspension of the formation of all essential vital principles, sudden prostration, passive effusion, without the

power of becoming organized; internal combustion is not proceeded with, and secernation of all effete and hurtful products contemporaneously arrested, the whole univocal in producing within the system causes which are specially exerted towards its own destruction.

Post-mortem appearances fully justify the conclusions arrived at; and treatment successfully pursued in accordance with inferential deductions perfectly ratify their soundness.

I will not trespass on your time by an enumeration of the various symptoms—an unnecessary proceeding in this instance—and therefore pass to the second portion of our subject.

2nd. What are the causes of influenza? These may be enumerated thus:

First. Proximate.—A low, weak, and vitiated state of the fluids and solids, inertia of the vital powers, and total absence of all conditions which destroy parts, or the system, by violent and powerful action, induced by continued exposure to the influence of some or all of the following:

Second. Remote causes.—These may be further subdivided into *a*, predisposing, and *b*, exciting.

a. Predisposing.—Hereditary taint, ill-conditioned, badly drained, and ill-ventilated habitations; insufficient food or of questionable quality, with other causes which tend to reduce the tone of the system, as indiscriminate use of cooling or purgative medicines, hard work long continued; and in conjunction with the above, the process of depilation, imperfect mastication on account of defective molars, and subjection to diseases previously of various kinds, as strangles, colds, pneumonia, bronchitis, &c.

b. The exciting are doubtless some of the above in excess—exposure to extreme states of temperature suddenly; subjection to an atmosphere charged with morbific matter thrown off from animals severely affected; the influence of easterly cold winds, and atmospheric conditions and peculiarities of a profound and delicate nature, too subtle for recognition by ordinary senses.

Influenza I believe to be decidedly contagious, particularly in advanced pneumonic stages; and I am inclined also to the belief that the disease has in no measure differed at the present period in its material characters of a malignant, typhoid, and variable type, from those outbreaks of which we read as having occurred thirty or forty years back, excepting probably that it has not been so prevalent; a result of the adoption of better understood principles of feeding, housing, and ventilation.

3rd. What line of treatment is necessarily indicated by these considerations?

To this I would briefly reply—That which soothes, supports, and raises the prostrate vital powers—not violent and powerfully exciting agents, these must be strictly avoided. Pure air, even temperature, warm clothing, quiet and seclusion, with an earnest attendant trained to implicit obedience, and well-directed domestic

treatment, and half the means of cure are already at the hands of the veterinary surgeon.

By soothing, supporting, and stimulating treatment, I would imply the effects derivable from the employment of such agents as the acetate of ammonia, aromatic spirits of ammonia, and the sesquicarbonate in the solid form; these being used in conjunction with the extract of belladonna or hyoscyamus, prove very useful in reducing the frequency of the irritable and weak pulse of this disdisease, while, correspondingly, the nervous energy is restored and strengthened.

Ammonia in its various forms has proved a priceless medicine in my hands; and when combined, in the solid form, with the Pulv. Scillæ and Ext. Belladon., given two or three times a day, the most irritable and defiant cough has rapidly given way, in addition to the relief experienced by the congested lungs, as well as membranes of the respiratory track.

Precursory diarrhœa is best treated with Ol. Lini and Tinct. Opii, with ammonia in one of the forms. Gastric irritation also will be benefited by relieving the bowels; for which I have preferred the oleaginous dose with ammonia and the extract, viewing this form of complication more as the result of reflex nervous action. Mr. Gamgee recommends Cape aloes; these I have never used, but the Barbadoes variety and opium have always produced with me greater harm than good, the former by their peculiar nauseant and depressant effect; and the latter by its influence on the brain if repeated, an effect not desirable in this affection.

Ophthalmic and rheumatic complications I have treated with the Potassæ Iodidi and Potassæ Nitras, with alternating doses of acetate of ammonia when the symptoms appeared to call for its use.

Ophthalmic, rheumatic, and rachialgic complications I have successfully treated with Potass. Iodid. and Pot. Nit., with alternating doses of the Ammonia Acetas when symptoms appeared to call for its use.

Blisters, rowels, and setons I have condemned as barbarous and unscientific in this disease, never having seen good from their use.

Anasarca will require in some instances scarification, and the use of mild diuretics internally as well as externally. The latter I have found of extreme benefit, when applied in the way about to be described, to horses in which the appearance of a permanently enlarged limb would prove a great detriment to appearances.

The leaves of the Folium digitalis are used as a strong infusion, with the Sodæ Carbonas, made by pouring boiling water upon both in a pail, three or four ounces of the former to half a pound of the latter; and when cool, applied by means of a bandage, kept constantly wet by being poured from the top in small but oft-repeated quantities.

The condition of the circulating fluid is also a question which concerns us much. Having lost its floating medium, by effusion more or less into various parts of the body, we must endeavour to

compensate for it by the administration of such medicines as will act with special direction in this particular. I have therefore used the Potassæ Bicarbonas, Sodæ Hyposulphite, Ammoniæ Carbonas, &c., with peculiar advantages, and which would be manifest with benefits a hundredfold when the returning appetite allowed of the consumption of Swedish turnips, carrots, cabbage, clover, and such edibles, with hay-tea for drink; these articles containing the very elements of which the sanguiniferous system was utterly destitute, and particularly needed by the whole frame to insure the life of the animal.

Another question in connection with the vital fluid—the blood—which demands important consideration at our hands, is the propriety of bleeding in influenza. My own belief is that the proceeding is unwarrantable and uncalled for, the quickly succeeding weakness of extreme characters being alone a sufficient reason for its avoidance. To preserve the quality of this fluid is to preserve life in this disease; and to remove it from the system we do not include the real cause.

Absolute purgation is equally reprehensible.

Transfusions, in extreme cases, and the employment of some of the phosphates and sulphites, are courses open to our consideration.

Such is an imperfect outline of my ideas in reference to this most destructive disease; much more might have been said; indeed the subject is inexhaustible, and concerns us much; but I have rather endeavoured to provoke thought and discussion than to be minute in descriptive detail—a course more in keeping with the objects for which we are met. Minor details of the nature, causes, and treatment of influenza, are purposely omitted from these propositions—debate must fill up the space.

A well-maintained discussion ensued, in which the majority of members took part. The use of rowels and setons was advocated by Mr. Thompson, who stated his reasons for their preference at some length, to which, however, the views of those present did not subscribe.

The principles of bloodletting did not meet with favour; a highly nourishing, sustaining, and stimulating treatment being principally advocated. The remarks of Messrs. Farrow, Stephenson, Dudgeon, Fairbairn, and others, were worthy of high consideration as being reliable on account of their practical bearing.

The essayist briefly replied to the various conflicting arguments; and afterwards the President disposed of the proceedings by his usual appropriate manner of summing up the various inferences to be drawn from discussions of this character; which was succeeded by a vote of thanks being warmly accorded to each of these gentlemen for their services on this occasion.

The next quarterly meeting will be held at Durham during the month of April.

YORKSHIRE VETERINARY MEDICAL ASSOCIATION.

Essay on Counter-Irritation. By Mr. Williams. *Read at the Annual Meeting of the Association.*

Mr. President and Gentlemen,—The subject of this paper, viz., "Counter-irritation," is one that I have taken great interest in for many years; indeed, since 1848 I have given it my deepest attention, and therefore it is with every confidence that I bring it before your notice. I am aware that the majority of the members will differ with me in opinion; but it is this difference of opinion I desire, as thereby an approximation to truth will be obtained.

Of the great therapeutic value of the so-called counter-irritants, no one can be in doubt. They are agents placed in our hands whereby much good can be effected if rationally employed, but where indiscriminately used, I do not hesitate to state that they are most destructive in their effects.

I shall treat of this subject under three distinct heads:—1st. The beneficial effects of counter-irritation to a part in a state of inflammation, as in phlebitis occurring after bleeding, in abscesses, and diseases of the articulation. 2nd. The effects of counter-irritants upon the products of inflammation, as in the passive stage of sprains of ligamentous structures, indolent tumours, and chronic disease of vital organs. 3rd. The injurious effect of so-called counter-irritation when employed in the treatment of acute inflammation of any of the great internal organs, but more especially—and of the greatest importance being the most frequent—in that affecting the pulmonary apparatus. I need not tell you, that I have consulted the very best authors upon both human and veterinary medicine who have written upon this subject, and find that the majority hold opinions different to mine, but in spite of all this I have every confidence that my view will bear the test of experience.

The term counter-irritation is not, in my opinion, a correct one; it is so designated from an idea that two inflammations cannot exist in the system simultaneously, therefore it is said that, by causing a superficial and manageable inflammation, we destroy the deeper, important and unmanageable one. This hypothesis is evidently erroneous. Inflammation of two distinct parts *can* exist simultaneously. By exciting a superficial inflammation, we do *not* remove the deeper seated one. Inflammation, as a rule, wherever situated, runs, in a previously healthy subject, a well-defined course, and is not unmanageable, if not improperly interfered with. Having objected to the term counter-irritation, you will naturally ask me to find a substitute for it; but the action of blisters in most cases is something we do not understand, something we have yet to study. We may, however, arrive at some conclusion by bearing in mind that the nervous fibrillæ of the skin to which the blister is applied are in-

timately connected, by means of the various plexuses and ganglia, with the nervous fibrillæ of the deeper seated parts, and thus by reflex action the effect of any external application may be conveyed to the part diseased; thus, blistering the skin causes exudation of lymph, and may not this effect be conveyed to a deeper seated part? I think so, and that this is the method by which a part diseased is repaired; a statement which I hope you will not forget when we arrive at the discussion.

Without further preface I will introduce to your notice the first part of this Essay, viz., the effect of blisters upon active inflammation, as in phlebitis, abscesses, and diseases of the articulations. Their *modus operandi* in curing inflamed vein. In the first place we must not forget that the cure of this disease is not effected by the vein regaining its pristine condition, and again becoming serviceable as a channel for the transit of blood; no, it is obliterated, and becomes an impervious cord, and as soon as this is thoroughly effected, the train of symptoms with which you are all familiar, disappears, and the parts are apparently restored to health. In the treatment of inflamed vein, a good blister will often act like magic. Now, does the blister, in this instance, remove the inflammation? nothing of the sort. It increases, strengthens, and hastens its thorough development; thus lymph is thrown out much more rapidly than before the application of the blister, the channel of the vein is completely blocked up, this lymph becomes organized, and as this process is developed and completed, the unhealthy symptoms disappear. I will not here, as it would be out of place, enter into the pathology of phlebitis, but you are all aware that it is characterised by a deposit and organization of lymph, and an obliteration of the vessel. The blister has its effects, or in other words the impression made by it, conveyed to the vaso motor nerves, and, as stated previously, the immediate result is the deposit of lymph, not only in the skin and subcutaneous tissues, but in the vein itself.

The effects of blistering in indolent abscesses, is somewhat analogous. We find an enlargement of a gland, perhaps having every appearance of running to abscess. By poulticing we find that very little progress is made towards this end, but by applying a blister it is found in a very short time that pus is formed, and the abscess ready to be opened. The question arises, how does the blister bring this about? Well, the tumour consists of a deposit of a fibrinous nature within the areolar tissue of the part; the areolar tissue consists of cells, and during the inflammatory process, it is now demonstrated that these cells have the power of appropriating the exudation, and transforming it within themselves into pus; the exudation serving as food, if I may so term it, to the cell, as in incubation the albumen, &c., of the egg, serves to nourish the germinal vesicle in the formation and development of a chick. You are all aware, that warmth and moisture have a most powerful effect in hastening the process of the development of pus, and in the generality of abscesses a poultice is all that is required; but in those cases where this is ineffectual, a blister, by bringing more

blood to the part, by increasing the exudative process; in fact, by increasing the food of the cells, hastens it on. We cannot call this counter-irritation, but a process of growth, and increase of growth by the irritation of a blister.

In diseases of the articulations—spavin for example—the application of so-called counter-irritation is of undoubted benefit, and the more continuous its application the more apparent are the beneficial results. Hence, in spavin, I find that setoning is perhaps the most effectual method of treatment, and that this is due, not to any special effect it may have by causing a discharge from the part, thereby relieving congestion and inflammation, but by its long-continued action being kept up (the articulatory surfaces of the cuneiform bones, as in spavin, having been destroyed by ulceration), the process of repair is hastened, and they are united together, forming as it were one bone, and performing the functions of one bone. When this process is complete lameness disappears more or less. We are all aware that, as a rule, spavin lameness is most severe when recent; and this well-known fact cannot be explained by any other method of reasoning than that, by time, the process of anchylosis is completed, and that by treatment this is hastened. Counter-irritation is not only beneficial in diseases of the minor articulations, such as those formed by the cuneiform hock bones, but in all lamenesses arising from injury to the greater ones: and here to enable us to comprehend their beneficial effects, we must glance at their pathological condition. Lameness is the effect, the apparent or visible effect of a lesion of some tissue entering into the formation of a part; if of a joint, it may be the articular cartilage, or the bone itself, or the synovial capsule, or some ligament. In the great majority of cases ulceration of the articular cartilage is found, giving rise to severe pain and lameness (I am speaking now of extreme cases) which will continue until this ulceration is removed. I will not multiply examples, but you all know that when true cartilage is once destroyed, it is not reproduced, but in its stead a fibrous or bony structure is thrown out. My ideas upon this question are these, that the loss by injury or otherwise of the cartilage, stimulates and excites the inflammatory process. This is the natural result of injury, and is the method by which parts are repaired: now, by applying severe blisters, the cautery or setons, we simply assist nature in this really and truly physiological process; we hasten on the deposit of lymph, and its organization either into fibrous or bony structure, and when the ulcerated or denuded part is repaired, although imperfectly, the symptoms subside. This stimulating property of counter-irritation, this hastening on to completion the exudative or reparative process, I beg to call the primary effect of all agents that are applied as irritants to the skin. Under this head may be classified their effects in atrophy, where by causing the flow of an increased amount of blood to the part we hasten on the re-development of tissue. Passing on from the primary, I beg to call your attention to the secondary or absorptive effects; and under this head we notice the action of counter-irritants

upon strains of ligaments and tendons in the passive or non-inflammatory stage, indolent tumours and chronic disease of vital organs. In these cases we have the products of inflammation to remove, products, that through some agency, have not undergone those metamorphoses necessary for their absorption, remaining therefore in the part, causing thickening and enlargement. Thus for example, in sprain of the metacarpal ligament of some duration, the evidences of active inflammation have passed off, but we have our patient lame, walking on the toe and the parts somewhat enlarged. We fire, blister, or seton, and in the course of a short time the symptoms abate, the thickening is reduced, lameness disappears, and the mobility of the limb is restored: let us take a retrospective glance at the history of the case. There has been injury to the ligament; and as a consequence, inflammatory action is set up. Lymph to repair the injured part is thrown out, both into the substance of and around the ligament, that contained *in* the ligament producing a divergence of its fibres, causing shortening. Well, the injury is repaired, and the active symptoms subside; but in consequence of the low vitality of the part, there is a want of vascularity to cause those changes to take place in the inflammatory products by which they are rendered fit to be removed by absorption, and they remain as a low form of fibrous tissue; by the application, however, of a blister, more blood is sent to the part, its vitality is exalted for the time, new blood-vessels are formed in the exuded substance, and thereby it is gradually absorbed. The same result is obtained in the treatment of indolent tumours and chronic disease of internal organs, excepting always that agents differing rather in actual remote effect may be employed, although the difference is more ideal than otherwise.

The third and last division of this paper is the injurious effects of external irritation when employed in the treatment of active internal inflammation. At the commencement I mentioned that, since 1848, I have thought more or less on this subject in consequence of having my particular attention drawn in this direction, by an epizootic that prevailed in that and succeeding years. I was then a pupil with a brother of one of our members, Mr. Fishwick, and although the disease was most fatal in the neighbourhood, yet, treated by him, it was not so. He had a large per centage of successful cases: he certainly blistered and rowelled, but only in a modified form, and to the breast only, and that not very extensively. After then my ideas changed, for by further study I felt that at the time he was sadly behind the age—that counter-irritation should be used freely and boldly; and that in order to check internal morbid action, an active superficial one should be produced. These were my ideas after being to college, and when I commenced practice these principles were carried out. You need not be reminded by me, gentlemen, that the great majority of you carry them out even now. Was this method more successful than the old one? Nothing of the sort; it was disastrous in its results; my patients died, many in a day or two after I had commenced to treat them. I then thought of the

old method, and fell back upon it, and was much more fortunate. Well, after impartially weighing this most important question in my own mind, through a number of years, and putting my ideas practically to the test, I have arrived at the conclusion, that the application of external irritants in active inflammation of any of the internal organs, is wrong in principle and disastrous in its results—wrong in principle, as it is most dangerous to interfere with the natural course of inflammation, this process running a well-defined course, and as a rule terminating favorably—disastrous in its effects, as a process that is tractable in its character becomes most violent and fatal. We will take inflammation of the lungs as our example: I find that this disease, when not interfered with by the use of blisters, &c., to run a regular course and to end satisfactorily in the great majority of cases, and that the fatal cases do not succumb to it for several days or even weeks, and that death occurs from extensive abscesses, hydrothorax, a want of strength in the animal, some previous disease, or old age. And now, how does the application of counter-irritation act injuriously? 1st. By increasing the attendant pyrexia or fever, the irritation, quickening the pulse, and respiratory movements. 2nd. Aggravating the inflammatory diathesis, and that condition of the blood the increased amount of fibrin. 3rd. Preventing the free expansion of the chest when applied to the sides; and the natural rest of the animal, by rendering him unable to lay down when applied either to the breast or sides. 4th. Acting toxically by absorption of the ingredients, but more especially cantharides or even mustard, into the system, thereby causing greater prostration of all the vital energies. I have stated that pneumonia is tractable, and not a very fatal disease when not aggravated; this opinion is independent of anything I may have read on the question, although human medical works have been consulted by me. It, like all other diseases, runs a natural course; and if the animal strength be sufficient, and other conditions favorable, it terminates favorably. Now, what is the natural course of pneumonia? briefly, the inflammatory products—the exudation—are infiltrated into the air vesicles and minute bronchii, and between the fibres, blood-vessels, and nerves of the parenchyma, imprisoning the whole in a soft mass, which coagulating, renders the spongy texture of the lungs more dense or heavy—hepatized. This accomplished, no air can enter, the nerves are compressed, the circulation is in a great part arrested, and the object of nature is now to convert the solid exudation once again into a fluid, whereby it can be removed by absorption, and partly evacuated by discharge from the bronchii. I will not enter into the history of this process, but simply that the exudation is converted into pus or some analogous substance; in fact, reduced into a condition susceptible of absorption through the vascular walls, and once more mingles with the blood, but in an altered chemical condition. In the blood the changed exudation undergoes further chemical changes, whereby, according to Liebig, it is converted by means of oxygen into urate of ammonia, choleic acid, sulphur, phosphorus, and phosphate of lime; the urate of

ammonia, by further means of oxygen, into urea and carbonic acid, the choleic acid into carbonic acid and carbonate of ammonia, the sulphur and phosphorus into sulphuric and phosphoric acids, which, combining with an alkali or earth, form phosphates and sulphates; and in consequence of these, and similar changes, the exudation is finally removed from the economy; but if not removed, it becomes further organized, and rendered subservient to the wants of the economy, as false membrane forming adhesions. External irritants interfere with this physiological process, as before stated, by increasing the fever, thereby causing so much excitement in the first place, that the tendency to exudation is increased, and producing so much after-depression, that the necessary transformations for the absorption of the exuded matter are unable to take place, so that it dies,—thus we have gangrene of the lungs and death of the animal.

Again, in all cases of inflammatory disease, the amount of fibrin in the blood is found to be most materially increased—from 3 to 10 parts in the 1000. This state can be produced by any irritating cause, and it is undoubtedly augmented to such an extent by the application of blisters when injudiciously employed, that the blood becomes so fibrinous and sizy, that it is unable to circulate through the minute capillaries of the lungs, and the animal dies from suffocation.

In conclusion, gentlemen, I sincerely hope that you will discuss this question with that impartiality which has characterised all the proceedings of this Society since its foundation; and that, although you may differ from me, you will state why you do so boldly but considerately, Further, I would beg you all to put the ideas enunciated by me to the proof of practice.

Veterinary Jurisprudence.

CIRENCESTER COUNTY COURT.

(*Before* J. Francillon, Esq., Judge.)

ALLEGED MALPRACTICE, AND NEGLECT OF PROPER MANAGEMENT OF A HORSE.

WILLIAM HENRY MOGG *v.* THE ROYAL AGRICULTURAL COLLEGE, CIRENCESTER.

IMPORTANT CASE.

(*Continued from* p. 216.)

Mr. Milward explained that the detailed account spoken of had been sent to Mr. Constable, when that gentleman was on a visit in Surrey, and he had since been unable to find it, otherwise it would have been produced.

Witness.—The removal of the horse from the hospital would injure the horse's lame leg. I considered it consistent with my duty to require Mr. Mogg to remove it, in the way I did, believing at the time it would be injured by the removal. I did not eaution Mr. Mogg.

Re-examined.—I did not think it a good thing to remove the horse. If Mr. Mogg had been satisfied with my treatment, I would not have had it removed. I did not express an opinion that the horse was incurable, but in the event of the lameness still continuing, I recommended firing. When the horse left the hospital, the leg was inflamed, which inflammation was caused by the casting, The horse was never blistered as we commonly understand the term. It is necessary before blistering a horse to cut the hair off. When I only wish to stimulate a horse, it can be effected by a less quantity being rubbed in. That is the difference between blistering and stimulating. It depends upon the quantity applied. I had not applied the blistering ointment as a stimulant until after the inflammation had subsided. Before Mr. Mogg's letter of the 21st of May, he had not said a word about the horse having been previously lame. I had no intimation of it exeept from that letter. If I had been perfectly certain that he was lame in the same leg from a severe sprain, I should not have written so confidently as I did. I had not time to keep a detailed account of the treatment of the horse. I have to lecture on various subjects connected with the veterinary professorship, and to prepare for such lectures.

Harvey Allen.—I am an assistant to Mr. Murray. It is my duty to look after the animals at the hospital. I act also as groom. On the 12th May, Mr. Mogg eame to the hospital. He was there before Mr. Murray arrived. I showed him over the hospital, and he expressed his satisfaction. He said he had brought a horse to Cirencester to be plaeed under Mr. Murray's care. He said it had a slight sprain. After he had been there some little time, Mr. Murray came, and I left them together, and went to my employment. I was ordered to go to Cirencester, to the King's Head, and fetch a bay horse, for Mr. Mogg. The horse was very lame indeed. The hospital is one mile from Cirencester. It took me an hour and a quarter to take the horse to the hospital. Mr. Mogg followed me. When we got to the hospital, Mr. Murray saw it. He was waiting at the gate. Plaintiff wished the horse to have grass, and old hay at night. I fed the horse three times a day, with hay and grass, the same as other horses. I gave grass in the morning, the same at dinner-time, and old hay for supper. For about five weeks, we kept giving the grass, and then the grass failed, and we gave new hay at breakfast and dinner, and old hay for supper. I have had great experience in feeding horses, and in my opinion the horse was well and properly fed. The horse was littered down, and the litter was removed every morning. The yard is naturally stony, and loose stones were there. Mr. Mogg complained of some loose stones when he first came, and I removed

them myself. Horses will sometimes roll. I saw this horse rolling several times. On one occasion, I was in my room, and I heard a violent knocking against the wall. I looked through the window into the yard, and saw the horse rolling against the wall, and that it was unable to get up. He was striking the wall with his feet. I ran and assisted him, by turning his head. He sprung up on his legs. The struggling to get up did him harm, and he was lamer afterwards than he was before. There was an abrasion on the hock, and the hair was rubbed slightly off the hip bone. These marks were not there before. I saw no other marks about the horse. There were no sores on the horse, nothing of the kind. I know what the mange is. This horse had not the mange. There were a few hairs off the horse's tail, by his rubbing against the door-post. That did not proceed from mange. Previous to the horse getting cast, he was going on favorably. After the casting, I think he was lamer than when he came first. I remember his being taken away. He was much better than when I fetched him from the King's Head. I remember Mr. Mogg coming to the hospital, to fetch him away. He was very angry. He said he should settle the account of £4 1s., with a view of getting it all back, and he would bring the place to the ground. He said he would bring an action against the college.

Cross-examined.—The horse came on the 13th May. The casting took place between the 18th and 24th June. Mr. Murray saw the horse regularly every morning—generally about eleven o'clock. The horse was in the yard, when it fell down. The yard is five times as large as this room. The horse was cast against the wall in the yard. When Mr. Mogg came on the 24th May, I explained to him about the casting. The college provides the food. I measure it out. We get the grass from the farm, and from the botanical garden. I mow it every day. I have always enough already mowed to give the horses' breakfasts. I mow in the morning for the horses' dinner.

Re-examined.—I always give the horses sufficient. There is no stint whatever in hay or grass.

Mr. Thomas Bedford, senior, of Can Court, deposed—I know the horse in question very well. It was brought to my farm from the college, about the middle of July. I saw it directly after it arrived. I looked him over. The horse was not in high condition, but still not in such very bad condition. I was present in Court at the commencement of this action. I heard what Mr. Mogg said about the bones protruding through the skin. I saw nothing of the kind. I saw no sores about it, with the exception of a little hair off the off-hip, and between the hock and the fetlock. He had no symptom of mange, or I should not have had him on my farm. I have a large farm, and valuable stock. I took the horse for the accommodation of Mr. Mogg. Last summer was remarkably dry, and the grass ground was very hard. A trial on that ground would be perfectly sufficient.

This was the case for the defence.

Mr. Edlin addressed his Honour at some length, in reply upon the whole case.

His Honour deferred his decision, remarking that he thought he should find it a case of real difficulty.

At the Court held December 13th, his Honour gave judgment; and in doing so, he remarked that:—In this very difficult case I have read my notes and gave the evidence and arguments my careful consideration. The result is that, with some hesitation, by reason of the burthen of proof lying on the plaintiff, I think that the weight of evidence is in his favour. I find that his horse was injured by the neglect of the defendants, in respect of care, of food, and of treatment while it was in their hospital. I give judgment for the plaintiff, assessing the damages at £30. Mr. Ellett asked for the expenses of a witness who had not been subpœned, but whose evidence was important. His Honour granted the application.

LISKEARD COUNTY COURT.

RICHARD HARVEY *v.* JAMES GODFREY.

The plaintiff, who is a farmer at Tideford, sought to recover from the defendant, a waggoner, living at Bodnel, the sum of £12 10s., for breach of warranty of a horse.

This was a jury case.

Mr. Coad appeared for the defendant.

Plaintiff stated that in December last the defendant brought a cart mare to Menheniot Fair, for which he asked £18. After some conversation between them, defendant said he wanted to exchange his mare for a smaller one. Godfrey having warranted her sound, staunch in harness, and free from vice, he agreed to give his cob and £4 to boot for the mare. The exchange was made, but after he took the mare home, he tried to put her in harness, and she proved to be a kicker. The next day he took the mare to defendant's house, but Godfrey was not at home. He subsequently wrote a letter to the defendant, telling him that if he did not bring back his cob, and return the £4, he should sell the mare. The defendant did not reply to his letter, and the mare was offered for sale, and bought in for £6 10s. He now sued for the difference in the value of the two horses.

Nicholas Tyack and *John Hichens* were called, and proved that a warranty was given with the defendant's mare when it was exchanged.

The defence was that the defendant had had the mare for three years, and being over-stocked with horses, he took her to Menheniot Fair with a view of getting rid of her. When Harvey agreed to exchange, the only representation that the defendant made to him

was that she was a good mare to work, and had done all he had required of her.

In reply to the judge, the defendant said he had never seen the mare kick, although he had put her in harness many times.

John Pascoe, *John Hawke*, *John Moon*, and *William Rowitt*, were examined in support of the defence.

The jury, after consultation, gave a verdict for the plaintiff for £5.

ARMY APPOINTMENTS.

1st Dragoons — First-class Veterinary Surgeon Francis Frederick Collins, from 16th Lancers, to be Veterinary Surgeon, *vice* Thomas James Richardson, who exchanges; March 14.

16th Lancers—Veterinary Surgeon Thomas James Richardson, from 1st Dragoons, to be Veterinary Surgeon, *vice* First-class Veterinary Surgeon Francis Frederick Collins, who exchanges; March 14.

MISCELLANEA.

"A BLUE HORSE."

A SO-CALLED blue horse, or rather a mare, has been exhibited at Hertford. The legs were certainly a faint blue, but the great peculiarity of the mare is that she is totally devoid of hair—not a particle is visible on body, neck, legs, or rump. She was foaled in Africa, and her skin resembles that of an elephant. She is gradually becoming piebald, and losing the faint blue tinge. She is very quiet and playful, resembles the Spanish mule in her action and mode of standing, and requires a great amount of food—we presume, to compensate for the lack of natural warmth by the absence of hair.

USEFUL AND DESTRUCTIVE INSECTS.

THE Council of the Entomological Society offer two prizes, of the value of five guineas each, to be awarded to the authors of essays of sufficient merit, and drawn up from personal observation, on the anatomy, economy, or habits, of any insect, or group of insects, especially serviceable or obnoxious to mankind. The essays must be sent to the secretary on or before the 31st December, 1865.—*Athenæum, March*, 1865.

OBITUARY.

Thomas Pengree Page.—We regret to have to record the death of Mr. Thomas Pengree Page, Veterinary Surgeon to Her Majesty's 19th Hussars, in his fifty-third year, from phthisis pulmonalis, on January 12th, at Meerut, N. W. P., India.

Mr. Page was a graduate of the Royal Veterinary College, London, his diploma bearing date June 28th, 1836. He entered the Indian service in 1849, and commenced his career in India on November 21st of that year. He continued to serve in the Bengal Light Cavalry until the beginning of 1857, when he returned to England on sick leave. In September, 1858, he again went to India, and was appointed to the 19th Hussars in November of the same year, in which regiment he served up to the time of his decease.

Few men in the veterinary department of the Indian army were more respected than Thomas Page. In his regiment he was a universal favourite, not only among his brother officers, but also with the men of the corps, and, indeed, generally throughout the army. He was buried with military honours, on the evening of January 13th, and his remains were followed to the grave by all the officers and men of the regiment, as well as by the officers of the different corps in the station, including the R.H.A., R.A., and Rifle Brigade, Bengal Cavalry, and Bengal Infantry. General Wheler, C.B., and Staff, were also in attendance, as well as General Troup, C.B., and many others, including civilians, &c. His loss will be felt by all, for he was a staunch and true friend, kind hearted, and ever ready to support the weak, and always foremost to lend assistance, more particularly to those of his own profession. In him the profession has lost an upright and straightforward member, a clear-headed and talented man, and one who, throughout his military career, served the government with zeal, and faithfully discharged his duties.

John Robinson.—We have also to record the death of Mr. John Robinson, M.R.C.V.S., Lichfield, aged seventy-two. Mr. Robinson was a highly respected member of the profession, although perhaps less known to many than his brother, Mr. W. Robinson, of Tamworth. His name, however, will be long remembered in association with the Cirencester Agricultural College, he being the first veterinary teacher attached to that institution. This appointment he held for

several years, when, from an increase of the duties and advancing years, he retired, to make room for a younger man. The Cirencester College owes him a great debt of gratitude for the able and almost gratuitous services he rendered it in its earliest infancy. Few, if any, could have been then found who would have done so much for veterinary science, in connection with agriculture, as John Robinson. His diploma bears date April 27th, 1815.

William Duncomb Lines.—This young, but rising member of the profession, died at his residence, St. John's Road, February 26th, after a long and painful illness, at the early age of thirty-three. His kind and amiable manner had won for him many sincere friends, who deeply sympathised in his affliction. Himself, and all, knew that his departure was but a question of time, he being the subject of that affection of the kidneys known as Bright's disease. He awaited his death in a calm and Christian spirit, scarcely repining at his lot, and anxious only for the welfare of his young widow and infant children he was so soon to leave behind. His diploma bears date May 11th, 1853. Peace to his manes!

To the above we have to add the name of M. Prince, Director of the Veterinary School at Toulouse, and President of the Committee of Editors of the *Journal des Vétérinaires du Midi,* which we have regularly received in exchange.

M. Prince was born in 1807, at Mantreuil-sur-mer, near Boulogne. He was a pupil at the Veterinary School at Alfort, from 1824 to 1828. In 1829, after a brilliant *concours,* he was appointed Chef de Service at the School of Toulouse, and was afterwards nominated as Professor and Director of the Veterinary School of Abou-zabel, in Egypt. In 1847 he received the appointment of Director of the Veterinary School at Toulouse, which post he occupied, with great honour, up to his death, which took place, after a few hours' illness from malignant fever, on the 8th of February last.

Thus one after another passeth onwards. Life, at best, is but short, and time is ever on the wing, while death, "the budding of the higher life," alone is certain.

"Oh time! faint shadow of eternity;
Oh life! frail bark on Fate's tempestuous sea;
Oh death! grim guide to immortality."

THE

VETERINARIAN.

VOL. XXXVIII. No. 449. MAY, 1865. Fourth Series. No. 125.

Communications and Cases.

POISONING OF SHEEP WITH RHODODENDRON.

By W. C. Spooner, M.R.C.V.S., Eling, near Southampton.

I was consulted to-day by a gentleman in this locality respecting the following case:

About 100 young sheep had been fattening for some time on chaff, corn, and cake, with what little they could pick up in a large park, which, however, had for some time been so extremely bare that scarcely any assistance was afforded by the pasturage. They had access to a pond of water, and were all well over-night, but soon after daylight yesterday morning a few were observed to be ill, and, soon after, others were affected, until, before noon, several died, and twenty-seven were killed to prevent their dying.

The symptoms were—a frequent, choking cough; frothing at mouth; attempts to vomit; a staggering gait, followed by inability to stand and indisposition to take food or water. Some other twenty or thirty were affected in a lesser degree. These have had linseed oil and Glauber's salts administered to them, and are getting better.

On making a *post-mortem* examination to-day I find, in all cases, the rumen contains a considerable quantity of the leaves of the common rhododendron in a green state, and partially masticated. In places the mucous coat appeared of a pale-pink colour, from increased vascularity of the vessels beneath it. In the sheep that actually died twenty-four hours

before examination the mucous coat peeled off with the food, but there was no ulceration or violent inflammation either of the stomachs or intestines. There was considerable injection of the vessels of the pharynx, extending to the larynx, also in patches on the œsophagus, and slightly in the fourth stomach, but still more in the intestines. There were likewise spots of ecchymosis between the mucous and muscular coats. This appearance was also to be seen in the brain, also on the fat of the kidneys and along the spine, in the sheep that were killed. There were no yew trees in the park, but a *large* rhododendron had been recently and extensively cropped by the sheep. There were twenty ewes that were fed with the same dry food, but, having been turned into the park only recently, they did not consort with the young sheep, and none of these were affected.

The Materia Medica speaks of the leaves of the yellow flowered rhododendron as being stimulant and narcotic, but does not mention the large common American shrub, which has light-blue flowers.

ON SOME OF THE DISEASES OF THE RESPIRATORY ORGANS OF THE HORSE AND OTHER ANIMALS.

By Professor Brown, M.R.C.V.S., London.

(*Continued from* p. 148.)

BROKEN WIND.

The chief characteristic of this disease is deficiency of expiratory power, shown by the laboured effort to expel the air from the lungs after inspiration. This peculiarity is most marked during a state of rest, because the distress occasioned by exertion, which is followed by rapid and laborious breathing, renders it difficult to distinguish the character of the expiratory effort; and in very slight cases the symptoms are entirely marked by the increase in the rate of respiration.

Broken wind in its worst form is indicated by signs which are not likely to be misinterpreted; setting aside the peculiar cough which is sufficiently diagnostic to the practised ear, the movements of the flanks are so peculiar as to lead to its immediate recognition.

Inspiration is always, in broken wind, performed with comparative quickness; sometimes this would only be observed after comparison with expiration, but in very bad cases the movement amounts to little more than an apparently involuntary and sudden fall of the flanks and abdominal parietes from their previously contracted position. Expiration, following upon the suddenly relaxed condition of the muscles, commences by a decided effort at contraction, almost a jerk upwards of the flanks, immediately succeeded by a continuous upward pressure, seemingly an attempt to squeeze the pulmonary organs into a small space, and thus assist in expelling the contained air. The expiration is therefore invariably a double movement, more or less evident according to the extent of the disease, requiring close observation in some incipient instances for its detection, or being evident, in the worst form, to the glance of the least interested looker-on.

Broken wind seems to be most frequent in heavy draught-horses; next to them ponies are its subjects, and those animals whose respiratory functions are called into active play, as hunters, who should in all reason furnish the most common examples, but, owing to the improvement in their present treatment during the summer months, as compared with the former practice, they may now be considered comparatively exempt.

Among draught-horses the peculiar breathing considered to be characteristic of broken wind is constantly observed, particularly in those animals that are kept upon coarse provender, consuming a great deal of straw and bad hay—in short, the refuse of the farm—and whose condition is consequently poor, accompanied with that dependent state of the abdomen designated, with more emphasis than elegance, "pot-bellied," a condition very naturally associated with the consumption of coarse food in large quantities, containing a small amount of available nutriment, and leaving a preponderance of excrementitious products to accumulate in the intestines, and impose upon the abdominal walls a superincumbent weight, beneath which they yield to the full extent permitted by their muscular and elastic tissues.

Causes of broken wind.—A careful examination of the conditions under which the disease occurs may throw some light upon its nature, and especially so when the defect in the respiratory organs presents itself constantly in connection with a certain system of management, as in the case of animals supplied with coarse food, which is commonly considered to be one of the causes of broken wind. The influence

of various kinds of diet in the production of positive derangements of the animal economy can hardly be over-estimated; but at the first glance there seems to be no particular reason why a certain kind of provender should induce disease of this peculiar type. Innutritious diet would naturally lead to general debility, with its numerous consequences; but while the breathing organs would in such case suffer in common with other parts, there would not arise any special want of capacity in them. The *general* effects of the coarse provender upon the system may therefore be excluded from consideration, as leading to no satisfactory explanation of a peculiar condition of a certain part of the organism.

The *particular* effects of the consumption of coarse food are principally apparent in the increase of the bulk of the abdomen, and the production of that dependent condition before alluded to, a condition which can be shown to be incompatible with perfect freedom of action of the respiratory organs. To make this evident, it is only necessary to recollect that the abdominal muscles are concerned in the whole of the respiratory act—first, by gradually contracting and diminishing the size of the chest laterally, while they at the same time lessen the posterior space by pressing the abdominal viscera against the diaphragm, they aid in expiration. And, secondly, by gradually relaxing and permitting the expansion of the cavity, they in a measure assist in inspiration. In an animal whose stomach and intestines are enlarged by an unnatural quantity of food of innutritious quality, it is fair to assume that the constant pressure will ultimately weaken the muscular power, at the same time that the extra weight requires that it should be rather increased than diminished. Under such circumstances a violent effort would be necessary on the part of those muscles to move upwards the extra weight; and having accomplished the requisite upward movement, the sudden relaxation would necessarily be followed by the sudden descent of the viscera into their former position; and thus, independently of any disease of lungs, the peculiar movements of the flanks in broken wind may be explained, at least in reference to those animals whose abdominal parietes are thus stretched and weakened. An additional reason for ascribing the defective breathing to absence of muscular power is to be found in the fact that the lungs commonly appear to be perfectly healthy, although it must be admitted that a loss of resiliency in those organs would not be indicated by any external signs, nor would any change in the minute structure have occurred unless the affection had existed for a long period, in which case the mere

retention of atmosphere in the air-cells from imperfect performance of expiration would ultimately lead to distension or rupture, and occasion an emphysematous condition of the pulmonary organs. It may be concluded, therefore, from abundant evidence, that "broken wind" in many instances, among badly managed and poor animals living on innutritious food, arises from mechanical obstruction to the movements of the abdominal muscles, associated with defective muscular power, ultimately leading to emphysema.

When it was fashionable to turn hunters out to grass after the season was over, cases of broken wind among them were common. Now it is usual to keep them in loose boxes, continuing the ordinary food in less quantities, and submitting them to moderate exertion, the disease presents itself but rarely. The influence of the new conditions would not be limited to the respiratory organs in such cases, although the sudden change from a life of active exertion to one of absolute rest, or nearly so (for, after the first excitement which an animal manifests on gaining his liberty wears out, the tendency is to stand or lie about), would produce a marked effect. Further, there is to be added the change of temperature to which the animal is frequently subjected, the bulky and watery food on which he subsists, and the absence of any attention to the condition of the skin, which up to this time has been carefully cleaned and kept in a state of artificial excitement by friction and warm clothing. Among the causes of broken wind may be included, therefore, sudden changes from the artificial life in the stable to the natural one of the fields, for which latter the animal has been unfitted by a previous system of cultivation in a totally opposite direction. Inaction immediately succeeding repeated and prolonged exertion would tend to induce a relaxed condition of the lung tissues, as well as of the muscles generally, while the soft bulky food might be expected to still further diminish the tone of the system, even if it did not cause the effects which have been considered in reference to draught-horses. Taking all the injurious influences together, there is nothing remarkable in the occurrence of serious derangement of the respiratory organs so frequently among horses, when they were so injudiciously treated.

Organic disease of the lungs, as a primary cause of broken wind, may be consequent upon active inflammation, or extreme exertion for which the organs are unprepared.

Inflammation, either of the mucous membrane or of the entire structure, by diminishing the calibre of the small air-tubes, causes distension or rupture of the vesicles.

Exertion may be continued sufficiently long, or be sufficiently violent, to produce the same effects in a shorter time, and in either case emphysema is the consequence, sometimes confined to the mere distension of the air-cells, constituting "vesicular emphysema," but more often including rupture and extravasation of air into the connective tissue between the lobules—"interlobular emphysema."

According to the extent of the emphysematous condition will be the amount of respiratory derangement. This position is too obvious to require proof; but it is necessary to remark, that the extent of the derangement is not to be judged by the size of certain large air-bladders on a portion of the lungs, and probably confined to that part, but by the condition of the vesicles over the whole pulmonary structure. Emphysema is not often so extensive as to be detectable over the whole lung by the naked eye; but by placing thin sections cut by means of Valentine's knife under the microscope, using a low-power objective, a very characteristic appearance will be seen. The walls of the vesicles are commonly much attenuated, some of the cavities are disproportionately large, apparently pressing against and obliterating others, and the epithelium is very loosely attached, readily falling from its position.

The observation is easily made, and affords very satisfactory evidence of a condition that otherwise cannot be demonstrated unless it exists in a marked degree.

Treatment applied to the disease "broken wind" is not likely to be permanently beneficial; but certain curious effects follow the exhibition of nostrums that are in favour with those who live by trapping the unwary. It is hardly likely that the professional man would be deceived, but the consideration of the effects produced upon the respiration will be interesting in a physiological point of view.

(*To be continued.*)

OBSERVATIONS ON "SOUNDNESS."

By R. H. Dyer, M.R.C.V.S., Torquay.

(*Continued from* p. 158.)

Having passed in review many of the diseases met with in the front limbs of the horse during our examinations as to soundness, there yet remains a few others which deserve our attention.

Those troublesome and often-met-with affections designated corns, flat feet, pumiced feet, chronic laminitis, or founder, and seedy toe—it would be an easy task to dispose of these if one had to pronounce the word sound or unsound, but I feel that there is a much more arduous task to perform than the mere mention of these words—it is necessary, before closing these observations upon the foot, that we dwell somewhat upon a consideration of these defects, and endeavour, if possible, to ascertain the nature and causes of them. It must be confessed that I approach these subjects, more particularly diseases of the horn-producing structures, with considerable diffidence, from the fact that a great many pages have of late been written upon their nature, causes, and treatment. Doubtless the very difficulty of ascertaining the *exact* nature of the maladies *at all times* will give rise to diversity of opinions amongst the members of our profession; and it is to be hoped that the expression of one's opinions and experience will assist in leading us to something like a correct diagnosis of the diseases under discussion. Difficulties without number are always in attendance upon the veterinary practitioner; still, with a determined and steady perseverance, he will in the end break off and turn aside many of those asperities he so frequently finds in his path.

In considering the nature and cause of flat and pumiced feet, it may be necessary to look for a moment at the anatomy of the part, but more especially its physiology. All anatomists have a knowledge of the situation of the horny encasement of the foot, its connection with the os pedis, and so on; but whether a correct idea has been formed as to the *functions* these several parts have to perform, involves a very serious question, and one it will be wise to discuss. It is known that the sensitive parts of the foot are connected to the insensitive by what are termed *dovetailed* laminæ, numbering at the wall about five hundred; and that these five hundred laminæ are acting as so many springs in the various movements of the limb. It has been affirmed by some anatomists that the foot is suspended by them, and that were the sole removed the foot would remain in its position. That the hoof and the pedal bone are connected together by this dovetailing, no person will attempt to disprove. There is ample evidence of the fact every time an examination of this part takes place after maceration. But I do not believe the sole plays so *un*-important a part in the economy of the foot as not to have its full share in maintaining the foot in its position. If we remove the horny sole but partially, we shall find that an im-

mediate alteration in the appearance of the sole takes place, plainly showing there is a certain amount of *weight* sustained *by* the sole.

If the laminæ of the *wall* were not of the character we know they are, or if they were made up of slips of muscular fibre, they would not possess the power sufficient for their purpose. Being composed of fibrous, periosteum-like material, they afford greater strength than if they were composed of muscular tissue.

I am *not* of opinion, as has been expressed by some physiologists, that the pedal bone would remain intact for any lengthened period *minus the sole*. The observation just made is somewhat conclusive evidence.

Much discussion has of late taken place with reference to the disease termed by most nosologists "*laminitis;*" and from the conflicting opinions given to the public and the profession through various channels, it behoves all the practitioners of veterinary medicine to pause ere they condemn this one, that one, or the other. It is understood that a diversity of opinion leads to discussion, and, if this be conducted in a proper spirit, will doubtless tend to some good in the end.

The late Professor Sewell was averse to the removal of shoes in an acute attack of inflammation of the laminæ. Professor Spooner used to advocate their removal during my pupilage. Again, one practitioner is desirous of procuring rest by *casting* an animal when suffering from this disease; another opposes the system, and so on. Doubtless all those gentlemen who have given utterance to their views and practice are convinced that those views are the actual results of experience; and we should, I contend, give to each and every one of them our best thanks for bringing their opinions before us.

It is not too much to state there are many ways of arriving at one point. We all know the merest neophyte in medicine must be aware that *two opposites* will produce similar results. If this be true, and I defy contradiction, we should, I repeat, pause before condemning the practice of a surgeon. So far as an opinion with regard to *physiology* is concerned, we may aver that one is *right* and a second is *wrong*, because there must be a certain function to be performed in health which may perhaps not be clearly ascertained or understood in the present state of science. Some persons speak of the pedal bone being *suspended!* I think there must be some mistake as to the term employed. It could not be meant as

literally written—certainly not a suspension-bridge. The word must have been used figuratively.

The movements of the bone of the foot within the hoof must be very circumscribed indeed, from the fact of the space being extremely small, and not calculated to admit of motion except in very confined limits. I have in another place suggested that the movements of the foot-bones and other parts are effected more by *compression* than by expansion or a particularly downward one. I look at the various motions within the hoof to be analogous to what would be produced by weight placed upon a piece of thick india-rubber situated within a box or given space. Sometimes, in placing one's ideas upon paper, it is difficult to express in words the *precise* meaning of the views and opinions which may have been formed upon a certain subject. We do not all possess the happy knack of expressing ourselves so as to be understood. Whether we adhere to the term "*founder*" or "laminitis," it makes but little difference if we understand one another. We begin to learn that the inferior part of the os-pedis is much more liable to inflammation and disease than was once taught; and I cannot help speaking in high terms of my friend Professor Gamgee, for his unwearied attention to this part of the pathology of the horse. The professor and myself do not agree upon all points; still in the main there does not appear to be a great difference of opinion, either as to physiology or the treatment of certain diseases.

Much has been written respecting the rings frequently met with upon the hoofs of horses during our examinations. My experience leads me to believe that but little attention need be paid to them when found upon the feet of young unstabled horses. I have examined some thousands of such cases, and have known but few the subject of lameness. Action, and action alone, will give us much information upon these several points.

Observations on flat feet, pumiced feet, seedy toes, and corns, together with some remarks upon acute and chronic laminitis, will form the subject of another paper.

(*To be continued.*)

BOTANY AS APPLIED TO VETERINARY SCIENCE.

By W. Watson, M.R.C.V.S., Rugby.

(*Continued from* p. 228.)

My last communication concluded the description of those plants belonging to the natural order Ranunculaceæ which in some form or other have been brought under the notice of the profession. But in thus describing a few plants it must not be forgotten that there are many others of a poisonous nature, to the effects of which our attention may at any time be called. When we reflect that there is hardly a plant belonging to the natural order Ranunculaceæ but what is possessed of more or less poisonous properties, and the wide and general manner of their distribution, especially amongst the herbage upon which many animals are fed, it will not create much surprise that, as more attention is directed to this subject, the injurious effects of these agents will become more apparent, and traced to their true source. We may rest assured that there is here a wide, most interesting, and important field for our investigations, and one which, as the science of botany becomes more fully applied, will amply repay our diligent researches by the magnitude of its results. In connection with this subject I shall next bring under notice a very interesting case of the poisonous effects of the rhododendron on some sheep, communicated to me a short time ago by Mr. Martin, M.R.C.V.S., of Rochester. Before giving the particulars of the case, we will notice the botanical characters of the plant. The rhododendrons belong to the class of *Exogens,* to the sub-class *Corolliflora,* and to the natural order *Ericaceæ*. The following is a description of the order :—"*Ericaceæ* (Heathworts).—*Calyx* 4 or 5-cleft, nearly equal, inferior. *Corolla* hypogynous, monopetalous, 4 or 5-cleft, regular or irregular. *Stamens* definite, equal in number to the segments of the corolla, or twice as many; hypogynous, or scarcely inserted into the base of the corolla. *Anthers* 2-celled, the cells hard and dry, separate either at the apex or base, where they are furnished with some kind of appendage, and dehiscing by a pore. *Ovary* surrounded at the base by a disc or secreting scales, many-celled, many-seeded. *Style* 1, straight. *Stigma* 1, undivided or toothed, or 3-cleft. *Fruit* capsular, many-celled, with central placentæ. *Seeds* indefinite, minute. *Shrubs* or *under-shrubs*. *Leaves* ever-

green, rigid, entire, whorled, or opposite, without stipules. *Inflorescence* variable, the pedicels generally bracteate." (Lindley).

The plants belonging to this order are chiefly found in the temperate parts of the northern hemisphere. Many of them are natives of this country; the common ling or heather, and the great variety of heaths, are familiar examples, while others have been introduced from different parts of Europe, Asia, and America, such as the rhododendron and azalea, and constitute some of the most beautiful plants with which our shrubberies and gardens are ornamented. Many of the plants possess stimulant and astringent properties, hence the employment in some parts of America of the *Gaultheria procumbens* (Mountain Tea), and the *Sedum latifolium* (Labrador Tea), as substitutes for tea. The only plants used in medicine are the *Arctostaphylos Uva-Ursi* (Bear-Berry), and the *Gaultheria procumbens* (Partridge-Berry), the former as an astringent in chronic affections of the bladder, and the latter as an aromatic stimulant and astringent. Dr. Pereira says, "The medicinal properties of the officinal heathworts are due to tannic acid (as in *Uva-Ursi*), and to a volatile oil (as in *Gaultheria procumbens*)."

The rhododendrons (*rhodon*, a rose, *dendron*, a tree) constistute a genus of exotic plants, belonging to the Rhodora tribe. They were introduced into this country about the year 1793, from different parts of Europe and Asia. "Nearly thirty species, varying in height from a few inches to thirty feet, have been introduced to Britain, and a countless number of most magnificent hybrids have been raised by British cultivators. The genus is one of the most splendidly floral of all the ligneous ones in the world, and now rivals the rose genus itself in both prominence of position and brilliancy of effect, in both British shrubberies and gardens." Mr. Royle says the Rhodoræ abound in stimulant and even deleterious properties. Thus, *Rhododendron ponticum*, *R. maximum*, *R. ferrugineum*, and *R. chrysanthum*, are poisonous to cattle which feed on them; and yet, in moderate doses, are used in medicine for the cure of rheumatism." In Pereira's 'Materia Medica' it says, "In the Rhodoræ are found several species remarkable for their narcotic and poisonous properties, as *Kalmia latifolia*, *Rhododendron chrysanthum*, and *Azalea pontica*. The poisonous properties of Trebizond honey are due to the latter plant."

The following is a description of the botanical characters of the variety most abundant in this country, and whose poisonous effects are recorded in Mr. Martin's letter, viz., the

Rhododendron ponticum (the *Pontic rhododendron*, or Rose bay): —"*Leaves* evergreen, oblong-lanceolate, glabrous on both surfaces, attenuated towards the thick petioles, with a streak on the upper surface, of a wide lanceolate form. *Racemes* short, corymbose. *Corolla* campanulate, purple or purplish pink, large, with ovate, acute, or lanceolate segments. *Calyx* minute, 5-toothed, somewhat cartilaginous. *Stamens* 10. *Ovarium* 5-celled." (Loudon.) This evergreen shrub is a native of the east, and was introduced into this country from Asia Minor about the year 1793. It thrives best on a peat or somewhat sandy soil, and attains a height of from four to fifteen feet. Its flowers, which are of a purple colour, are arranged in clusters at the end of the branches, and bloom from May to July. It is chiefly cultivated in this country as an ornamental shrub, and as such it has few equals. "Its power of pleasing resides in the combined effect of habit, foliage, and bloom; and is so great in the first and the second, irrespectively of the third, as to render it everywhere mighty and beautiful as a mere evergreen; yet both its chief diversity within itself, and its main fascinations during the period of bloom, exist in the varied colours and tints and forms and aggregations of its gorgeous flowers." The following observations respecting this plant are taken from Loudon's 'Arboretum et Fruticetum.' The rhododendron was well known to the Greeks, both by that name and by the name of rhododaphne, or the rose laurel. The Romans also were acquainted with this shrub; but, as Pliny observes, they had not the good fortune to give a name to it, for it was in ancient Italy, as it is at present throughout Europe, known principally by its original Greek name. The ancients were well acquainted with the poisonous qualities of the flowers of the rhododendron and azalea, both of which are abundant in Pontus; and the flowers had such an influence on the honey of the country, that the Romans would not receive it in tribute, but obliged the inhabitants of that part of Pontus to pay them a double portion of wax in lieu of it. Both the rhododendron and the azalea were abundant in the neighbourhood of Trebizond in the time of Xenophon, and they still are so. Xenophon reports that, when the army of 10,000 Greeks, in their celebrated retreat, approached that city, his soldiers, having eaten the honey which they found in the environs, were seized with a violent vomiting and purging, followed by a species of delirium, so severe that those least affected resembled drunken persons and the others madmen. The ground was strewed about with the bodies of the soldiers, as it is after a battle. Nobody died, however,

and the malady disappeared twenty-four hours after it had commenced, leaving only a sensation of great weakness."

The only record of the injurious effects of this shrub on animals in this country that I can find is related by Mr. Kettle, M.R.C.V.S., of Market Drayton, in the *Veterinarian* for August, 1859. In this instance nine yearling calves had got into a flower-garden and partaken freely of the *Rhododendron hybridum*. This plant, if not the *Rhododendron ponticum*, is probably a variety of it. The animals exhibited the following symptoms:—"Pulse below the natural standard, steady, and tolerably full; breathing slower than usual; visible mucous membranes somewhat pallid; nose dry; skin warm; eyes dull, and the lids half closed; bowels costive; a continuous and most painful grinding of the teeth; frequent vomiting of saliva, mingled with considerable quantities of the leaves and buds of the rhododendron. They likewise manifested great disinclination to move, and when made to do so staggered about in such a manner as to shock the nerves of the disciples of Father Mathew! They would reel a few paces, then rush forward with their legs widely extended, and in an eccentric way, and suddenly fall." In this instance the whole of the animals recovered in the course of a week. Although this case clearly pointed out the injurious effects of this plant, considerable doubt remained as to its poisonous nature.

The detailed and very interesting account of the death of several valuable sheep, which I received, a short time since, from Mr. Martin, will, I think, at once decide this matter, and clearly prove that this, and in all probability most of the rhododendrons, are powerfully poisonous plants. On the receipt of Mr. Martin's letter I at once wrote to him, thanking him for referring to me on a subject in which I feel so much interest, and also asking his permission to place the fact before the profession in the pages of the *Veterinarian*, feeling sure that the Editors of that Journal would kindly insert them. I also requested a few further particulars connected with the case, all of which were readily granted by Mr. Martin. The following is the substance of his communication:

ROCHESTER, *Jan.* 31*st*, 1865.

DEAR SIR.—I have just met with a very interesting case, which I am induced to ask your opinion upon, as our authority on botany as applied to veterinary science.

A gentleman farmer had nine very valuable rams which were taken suddenly and very alarmingly ill; my attendance was requested instantly, and upon my arrival on the premises

I found that two of the animals were dead, and another nearly so. The remaining six presented the following symptoms. They staggered as they walked, foamed very much at the mouth, grated their teeth, and were very dull, or rather stupid. Indeed, impairment of the function of the brain was the leading and prominent symptom.

Upon inquiry I ascertained that the owner had had a pigeon-shooting match in the meadow in which the rams were at pasture, and to prevent any accident occurring to them he had them removed to the farm-yard. It appears that the gardener had thrown some rhododendrons which had been removed with their roots from the shrubbery into the yard, and that the rams, attracted by the green leaves, had eaten of these. The quantity partaken of, as shown by the *post-mortem* examination, did not appear to be large. The leaves had not passed from the rumen, and there was an absence of any inflammatory action in either this or the other stomachs or intestines. It is difficult to understand how this plant destroys life, unless it be by a change wrought upon the nervous system.

Since this occurrence a farmer has informed me that some sheep of his managed to get into his garden and ate some of his rhododendrons, and that a similar effect was produced upon them. Fortunately they were soon discovered, and therefore they did not partake of a sufficient quantity to destroy life. They frothed at the mouth, and staggered in their walk, and were ill for some days afterwards. These facts prove satisfactorily enough that this plant is poisonous to sheep, and perhaps also to other animals.

The treatment I adopted consisted of the administrations of oleaginous purgatives at short intervals, until the bowels were freely acted upon. Four of the rams died, but the other five are doing well, and will, I believe, recover.

Yours, &c.,

J. B. Martin.

To Mr. W. Watson.

That these sheep were poisoned by the rhododendron there cannot be a doubt. What the poisonous principle is, at present, is not known; but, as Mr. Martin suggests, it is of a powerful narcotico-irritant kind.

I learn from the Editors of the *Veterinarian* that two allied cases of the poisoning of sheep with the rhododendron have recently occurred, one in the practice of Mr. Spooner, of Southampton, and the other in that of Mr. Williamson, jun., of Beaconsfield. These cases will most probably appear conjointly with this, and thus add to their value.

COMMUNICATION FROM "ALIEN."

ARMY OF THE POTOMAC; *March 16th*, 1865.

GENTLEMEN,—With your permission, I purpose making some observations on the experience, or everyday life, of a veterinary surgeon in the army of the United States of America. I believe that much practical insight into many hitherto unknown diseases affecting the horse, both in North and South America, has been obtained by me during the last four or five years. I have travelled over a considerable extent of country, north and south of the Equator, bearing with me a love of my profession, and have been pleased to find the legitimate practitioner is recognised and esteemed, and also my Alma Mater. Feelings of gratitude, therefore, induce me to address you.

Here in Virginia I have the medical charge of near 2000 horses, and a few hundred mules thrown in to fill up leisure time. I have been above two years in the United States, and am pleased to be able to say I have been generally successful in my treatment. I find that many drugs may be increased in dose to a remarkable extent when given to horses in active service, or in a campaign in the field. I seldom get a free response of the bowels from the usual dose of aloes, and give with impunity ʒxij to produce the desired effect. It may be asked, How is this? I believe it arises from the horse being constantly exposed to the changes of weather, and continually fed on dry, hard Indian corn, or oats. Else he is bolting handfuls of coarse hay, and then fills the stomach and intestines to repletion, taxing thereby the provisions of nature to aid digestion, and at the same time producing a torpid state of the alimentary canal. Aloes is the only purgative I use, or wish to have. I will next speak of the dose of carbonate of ammonia, which, with aloes, an army veterinary surgeon ought to get along very well with most of his patients, either when temporarily stationed or on the march. Carbonate of ammonia I have frequently administered in doses of from ʒiij to ʒvj in cases of flatulent colic, also in cases of indigestion and epidemic catarrh, pneumonia, &c., and not only have had no ill effects from it, but generally the result has been the curing of my patient too quick to gain either much applause or a due share of greenbacks for my services; unless I have had to run through a whole troop wholesale, as I

have now and then, when the sooner my patients are off the books the better.

As a rule, I notice that but few horses down here—except those of the cavalry divisions, which are well drained of their bad stock—are capable of undergoing much fatigue ("under the saddle") without becoming lame, or being put on the sick list for some time after a sharp exercise or rapid march of a few miles. They will seem well and sound when ridden in to camp, but when feed and water call is sounded the cry is "Oh, my horse is lame, by Jove! Send for the doctor." At the same time adding fuel to the fire by hanging under his mouth a large portable feed-bag containing four or more quarts of dry corn or oats. On the doctor's arrival away flies the corn, and, it may be, a few hard words with it. On examination he finds the horse labouring under what we call compound comminuted laminitis out here, or wholesale founder. The animal is stiff, as if dead; the hind and fore extremities are alike; countenance very wild; breathing much increased; pulse also, but feeble; a cold perspiration existing about the chest and along the neck; he is unable to move, yet the appetite is not destroyed in the least until the next morning, after the disease has shown itself. I give a bold purgative alone at first, then combine calomel with the aloes, which will generally complete a cure in from five to six days; applying daily a strong stimulating embrocation to all the legs, and insisting upon the horse being well nursed, at least as much as circumstances will admit. These cases have been very prevalent during this and the past month. Of colic and enteritis I have seen but few cases since the month of December. During the summer and up to that period I had any number of them. Cracked heels have been rare this winter. But I have no doubt that up in the north, or the far west, hundreds of army and other horses have become almost entirely useless, and are still suffering from this complaint, which in America is seen in all forms and extending into incurable diseases, termed "Mud Fever," "Scratches," and a whole parcel of crack-jaw technicalities.

Did time and circumstances permit, I would give particulars of several strange diseases that I have taken notes of, affecting in some the eyes, in others the air-passages, &c.; but our good commissioners of peace are beginning to burst forth in twelve-pounder peals, and, being at the immediate front, the words "pack up" greet my ear. However, these words are becoming sometimes too frequent, and a veterinary surgeon here is not always out of danger by a long shot. He has to rough it, right or wrong. No waiting for this one

or that one; fine or fair weather, or leaving things until the morrow; everything goes by *detail* even to the disposing and condemning of worn-out horses, which is a business entrusted to the especial judgment of lieutenant so and so, or captain so and so, inspecting officers, &c. A veterinary surgeon has no show whatever, and but comparatively little pay for his services. But I must conclude; you will pardon the abruptness, but the cause has been assigned.

I am, truly yours.

To the Editors of 'The Veterinarian.'

ON THE NATURE OF FOOD OF ANIMALS.

By J. Seaman, M.R.C.V.S., Saffron Walden.

Cake containing the most oil is not the best fat-former, neither is a highly nitrogenized food the most suitable for beasts of burden.

The chemist may analyse certain cattle food, and find it to be rich in the oily, starchy, or the albuminous constituents; also in saline matters and water; and yet such, in a raw state, may not be suitable food for either the ox, sheep, horse, or pig, or for the production of the fat and lean of beef, mutton, or pork. The theory of Professor Voelcker and Dr. Macadam is that, "The quality of an oil-cake is very much measured by the quantity of oil it contains," the latter gentleman further observing, "as this is easily assimilated by the animal, and is readily stored up as fat. Professor Voelcker recommends beans to "beasts of burden, because they contain large quantities of the albuminous constituents; and as these go to form the flesh of the animal, he is endowed with greater physical strength." These notions strikingly exemplify the difference between "Theory and practice; between the reveries of science and the common sense of the world." If it were true that fat is easily assimilated by the animal, and readily stored up as fat, then the grazier would do well to give oxen linseed-meal, for in this there is abundance of ready-made fat; but the man of practice has discovered that linseed-oil possesses purgative qualities, and it is important not to induce purgation in healthy animals. On this account linseed-meal is almost entirely abandoned as food for weaning calves, and a lot of fatting cattle came under my notice, this season, that were having only twenty ounces each

daily, yet they were so affected with diarrhœa that, to use the herdsman's own words, "it made them so bad, that they did not get over it for four days." At a discussion which followed a lecture by Professor Voelcker, at the Maidstone Farmers' Club, Mr. Elvy remarked, "that, with regard to oil-cake, as a practical grazier, he could state that the more oil they pressed out of it the better." And I, as a country veterinary surgeon, witnessing the fattening annually of 2000 oxen, 100 calves, 20,000 sheep, 5000 hogs, and the feeding of 1000 horses, belonging to many different owners, and many different methods adopted for feeding them; being also called upon to attend them in disease, and having an opportunity of observing them in health; by the experience obtained from such a source, I have not the slightest doubt as to the soundness of Mr. Elvy's opinion. Moreover, these opinions tend greatly to establish the correctness of the theory of one of the most eminent chemists of modern times, Professor Baron Liebig, "that such food, in the various forms of starch and sugar, is closely connected with the formation of fat," observes this great chemist; and he instances that "the pig fed upon potatoes and maize quickly gets fat, and the cow fed upon good hay yields plenty of butter." I myself have known many cows fed upon hay from the rich pastures of marshland of Cambridgeshire and Lincolnshire yield from eight to twelve, and in some instances as much as fifteen pounds of butter weekly, "and in the human female beer and farinaceous diet increase the proportion of butter in the milk." The food which, according to the experience of physicians, has a decided influence on the formation of fat in animal bodies, is that which is richest in starch and sugar. Further, it is observed by Liebig that, "whatever views we may entertain regarding the fatty production of the body, this much, at least, is undeniable, that the herbs and roots consumed by the cow contain no butter, that in hay and the other fodder of oxen no beef suet exists, that no hog's lard can be found in potatoes, and no fat of any kind is to be found in some specimens of maize, yet pigs will fatten upon it, and that the food of geese and fowls contain no goose fat or capon fat." If, then, an animal can be fatted upon grain such as maize, which contains no oil, it shows very clearly the correctness of Baron Liebig's theory, that starch and sugar are the great fat formers; and it also shows the good judgment of Mr. Elvy in choosing a cake out of which all the oil had been pressed. Experience and sound science, then, have taught that, instead of the quality of cattle food being measured by the quantity of oil, it should be measured

by the quantity of starch and sugar it contains, that is, so far as its fattening properties are concerned.

Four great principles enter into the composition of all seeds, grasses, and grain. 1st. The albuminous, which is especially destined for the production of flesh, tendons, ligaments, and all the other substantial structures of the animal body. 2nd. Starch, for the production of fat, which, combining with oxygen, whilst that gas is circulating with the blood, keeps up the heat of the animal body. 3rd. The saline matters, such as soda, potassa, and magnesia, which also play an important part in the animal economy. And 4th. Water, which is of the greatest importance to render soluble the other constituents of the blood, and cause them readily to circulate through the capillary blood-vessels. Now, the grain which contains all these four great principles, nicely proportioned—that is, when they are in a form so as to be easily ground by the teeth and chemically acted upon by the saliva and other juices of the digestive organs—should be reckoned the most nutritious and fat-forming cattle food.

Lentils, peas, wheat, beans, and barley, contain all these principles; but in a raw state, when only a little too much is eaten by either horse, ox, or sheep, they are very deleterious in their effects, because it is not in the power of the digestive organs to prepare them suitably for conversion into blood. Instance two horses in the hunting field—for here a great amount of endurance is required to enable the horse to carry its rider a long day over a heavy country—the one fed upon eleven stone per comb oats, the other with a mixture of oats, peas, or beans; the latter will be seen to sweat profusely, pant for breath at the first stiff gallop, and is never seen in at the death of a long and heavy run; whilst the former (I am supposing each horse to be similarly trained and ridden) is in at the death, takes one deep inspiration, and his breathing becomes quickly tranquil.

Peas and beans are highly nitrogenized grain; but a horse eating them is first affected with diarrhœa, then constipation, and has griping pains.

As it is with getting a horse into condition, so it is with fatting oxen and sheep; such food must be given from which suitable materials can be extracted for conversion into blood, flesh, fat, and all other parts of the animal machine, and at the same time not to unduly tax the digestive organs (that is, not to produce pain whilst it is undergoing digestion).

A sheep dying from eating raw beans, wheat, or barley; a bullock from eating wheat or barley meal; and a horse from eating wheat; the starch of these grain has not been changed

into sugar, the gluten has not formed any diastase, and in consequence of this non-fulfilment of the chemical laws of digestion, putrefactive fermentation is set up within the digestive apparatus, sulphuretted, carburetted, and phosphoretted hydrogen and carbonic acid gases are formed, and the animals die poisoned by the elements of their own food.

A theory is only sound when it will stand the test of practice, and the theory of Professor Voelcker and Dr. Macadam, "that food containing the greatest quantity of ready-made fat is particularly suitable as food for producing fat in the animal; and that food containing the greatest quantity of the nitrogenized constituents (albumen, caseine, and gluten) are most suitable for beasts of burden," are not sound theories, because they will not stand the test of practice.

The proprietor of a flock or herd cannot always attend in person to the feeding of his beasts, and as servants do not always use proper care in mixing the different foods (meal, cake, chaff, and roots), it is important that a food should be supplied containing not only all the elements of nutrition, but also of a nature not to injure the beasts when taken in excess; and hence it is that oats are especially preferred as food for horses, for if double the quantity allowed are eaten the animals suffer no ill effects. In consequence of the low price of wheat and barley, many farmers have tried these grain in a raw state as food for horses, but have been obliged to discontinue their use in consequence of their producing disease in the animals that have eaten them. At my suggestion these grain are now germinated (that is malted, with the exception of being kiln-dried), and in this form they are now extensively used in this neighbourhood for farm horses, and also for sheep. Old horses with worn-out teeth, and those having delicate constitutions, have been restored to health and made fat by this saccharized grain diet.

Typhoid fever has prevailed to a great extent amongst horses in this locality during the past autumn and winter, and during convalescence, when the digestive organs have been weak, saccharized wheat and barley have been found a most excellent diet. Fever of a low type has also prevailed amongst the ewe flocks of this district. I may give one flock as an instance of the severity of the complaint. The ewes were so much reduced in condition that many could scarcely walk without reeling, and their milk communicated the disease to the lambs, upwards of forty of which died in a few weeks. One pint of oats, half a pint of peas, and a quart of bran were prescribed for each ewe, with hay and pea-straw

chaff; but the sheep did not improve. I now ordered semi-malted barley, and after the first week no more lambs had died, the health of the ewes began to improve, and in six weeks from the commencement of their new diet the whole flock was restored to perfect health. From scarcity of roots the ewes were allowed but one wurtzel daily. The proprietor was previously much prejudiced against saccharized grain, but is now convinced of its superiority as food for a breeding flock. The same gentleman, and many others in this district, are now using it as food for draught horses, and attach much value to it for this as well as for sheep-feeding purposes; and what makes saccharized grain of still greater value is that in seasons like the present roots may be dispensed with altogether.

The question is now being daily asked by flock-masters, What is to be done with the sheep for the next three months? We have no turnips, no wurtzel, no seeds; and in this neighbourhood there are many flocks varying in size from 3000 to as many hundreds and scores, and only a few isolated patches of pasture. The graziers' difficulties are daily increasing, and in the opinion of some there is no remedy. When asked the above question my answer has been, Saccharize your wheat and barley, and give it to your sheep. But Mr. Laws says that malted barley is not superior to barley-meal as food for sheep and oxen. Perhaps my reader is a grazier; and do you think it common sense to use raw barley-meal as food for sheep, without a single root to add to it? and do you think it common sense to use whole wheat or barley for either your flocks or your herds? Many sheep-owners in the neighbourhood of Newmarket can practically and faithfully answer this question, from the fatal effects of raw barley upon their flocks last autumn. Having as much respect for honour as Mr. Laws, I will stake that, and if honour is not thought a sufficient guarantee for the truth of what I have asserted, I will offer a further guarantee to reimburse for every sheep or horse that is killed from eating too much germinated wheat and barley; but I beg to remind Mr. Laws that he would require well-filled coffers to be enabled to compensate for losses sustained by death of oxen, sheep, and horses, from eating raw wheat and barley, whether whole or in meal.

STRANGULATED INGUINAL HERNIA, AND RUPTURE OF THE STOMACH IN A HORSE.

By G. Armatage, Veterinary Surgeon to the Right Hon. the Earl Vane.

The following case occurred in the practice of Mr. A. Mann, sen., Lambton, and as it possesses features of peculiar interest, I think it deserves a place in our veterinary records.

The subject of this notice was a brown horse, seventeen hands high, and about fourteen or fifteen years of age, used on the collieries of the Earl of Durham, principally as a crab horse; that is, he was employed in a kind of windlass, by which workmen are lowered or raised during their examination and repair of the pumps, &c., in the shafts of coal pits. Such an occupation is often long continued, necessitating an exposure, frequently to most inclement weather; but when men only are to be lowered, the work is not considered laborious, nor was the horse found to suffer under it in any way whatever.

On one occasion, six years ago, when drawing coal wagons on a slight gradient, he stumbled and fell, and was pushed along the rails by the wagons a distance of about thirty yards, receiving extensive bruises about the haunch, loins, and thighs, which appeared to be superficial, however, and were quite well in the space of a month, the animal being again put to crab work, none the worse to all appearances. From this time till December last he continued to work well, maintained his strength and condition, yet appeared somewhat dull, but never requiring medical assistance. On the 12th of that month he was seized with slight colic, for which Mr. Mann prescribed an anodyne mixture, and returned to his work again in half an hour.

Nothing further took place until the 2nd of the present month, March, when the driver again brought the animal now *in extremis*. The symptoms were urgent, and speedily developed, consisting of hurried respiration, cold perspiration over the whole body, which in the first instance broke out abruptly on each side of the thorax, behind the shoulder. As he walked he reeled, and when allowed to stand, trembled much, and with difficulty escaped falling. The hind legs were placed widely apart, and he constantly attempted to

urinate, succeeding only in passing a few drops of normal-looking fluid. The eyeballs protruded in the extreme; the neck was arched, and the muscles were strongly contracted, drawing the nose in close approximation to the chest, where it was retained. The tongue was black, and hung from the mouth, which was tightly closed, allowing, however, of white froth to be discharged in great quantities. Mucus and froth of a dirty colour also came from the nostrils profusely; the conjunctiva was of a pale-yellow colour, with its network of vessels finely injected. As nothing had passed his bowels for some time, it was attempted to introduce the hand, but this could not be effected on account of extreme spasm. At times he would attempt to lie down, and continued thus—experiencing no relief from treatment—from 10 a.m. to 3 p.m., when he suddenly dropped dead.

From the first the pulse was imperceptible at the jaw and radius, accompanied with extreme coldness of the ears and extremities.

A *post-mortem* examination was commenced on the morning of the 3rd inst.

On opening the abdomen a considerable amount of fat was seen adhering to the intestines, and about four gallons of red serum escaped from the opening made into their walls. About half the quantity of fluid also came away by the rectum, when the carcass was moved in the act of flaying.

The transverse colon exhibited a patch of peritoneal inflammation six or eight inches in area; but all the other tissues and viscera were blanched and flaccid.

Food was distributed throughout the cavity, and extended to the pelvis. The intestines were next turned aside, and found to contain fluid only; but in the omental sac was a large mass of half masticated hay and oats, with whole beans, occupying a space equal to double the quantity found in any stomach in health. The small intestines were traced, when a portion was found to form an inguinal hernia, with adhesions: at the pyloric end it was free. The œsophagus was divided, when the cardiac portion of the stomach was discovered to be extensively lacerated along the greater curvature, and the laceration extended to the pyloric end.

When this case was first related to me, and a special reference made to the apparent absence of much of the tissue composing the coats of the stomach, I fancied it might be one of ulceration and perforation; but on carefully examining the parts, and ascertaining more of the facts, I can glean that the horse was first seized with symptoms of severe and immovable obstruction of the bowels. The tenesmus, with

violent contraction of the rectum on the arm being passed up, the partial sweats bedewing the body, indicate, with the aid of the information derived from *post-mortem* appearances, that the animal had a strangulated inguinal hernia. This is so rare in geldings, that its having been overlooked need not astonish us, especially as the symptoms were very decidedly those of ruptured stomach.

On examining the stomach and omentum at my leisure, I have found that the particles of undigested food still adhering to the omentum indicated that the gastric laceration must have occurred shortly after the ingestion of a quantity of food. As is usual in these cases, the over-distended organ had become lacerated along the greater curvature by the tearing of the peritoneal coat first, then of the muscular, which had receded so as to deceive one as to the amount of destruction that the stomach had sustained. The mucous membrane was soft and irregularly torn, and in a condition as if it had suffered somewhat from the action of the gastric juice.

This case is replete with interest, and it shows how careful we should be in diagnosing cases which appear at first sight trivial and insignificant.

Who thinks of examining the inguinal region of a gelding though he may be suffering from some extraordinary and unaccountable obstruction? It is very important to make a close examination in all cases in which injections cannot be given or retained in the rectum. The strangulation in the case above related could not have occurred before the horse had eaten the full meal, which rendered possible the rupture of the stomach, and I am disposed to believe that the animal was fresh and well until he took his last feed, after which the strangulation supervened, and this indirectly led, through the horse knocking himself about, &c., to the coats of the stomach giving way.

When I say that the horse was perfectly well before the last attack which ended in his death, I do not wish it to be understood that he was entirely free from inguinal hernia; as few will doubt that in all probabllity the hernia with its adhesions had existed for some time, and at last led to the horse's sudden destruction through one of the many causes which are capable of producing a hernial strangulation.

EXTENSIVE MELANOTIC DEPOSITS IN A BLACK PONY.

By Robert Hall, M.R.C.V.S., Stockton-on-Tees.

I am induced to send the following observations from reading a communication in the December number of the *Veterinarian*, by Mr. T. Gregory, M.R.C.V.S., of Tunbridge, in which he asks, Does melanosis occur in any but gray or white horses? The pony, the subject I may say of this remarkable disease, was black in colour. In height he was about thirteen hands. Of his previous history I know little or nothing, he having been brought a carcass to the Durham County Kennels, where, during the summer of 1863, I was in the habit of making *post-mortem* examinations.

From what I could learn, the pony had been doing ordinary pit work for some considerable period, and had never shown any symptoms of disease up to the time of his death. On the day of his appearing unwell, he was being brought up, when he suddenly expired.

Post-mortem.—I found a large melanotic deposit occupying the greater part of the abdominal cavity. Its chief attachments were to the liver, diaphragm, and kidneys, one of which was completely enclosed, and had evidently long ceased to perform its usual function; the other kidney was much enlarged and diseased. The tumour presented a curious appearance, being perforated in numerous places for the passage of the various intestines; and although I did not place it in the balance, it could not have weighed less than six stones.

POISONING OF SHEEP BY RHODODENDRON.

By C. Williamson, M.R.C.V.S., Beaconsfield.

On Monday, the 20th of February, I was called to attend some two- and four-toothed sheep, which had been purchased at Beaconsfield (at 50*s*. per head) on the 13th, of R. R. Clayton, Esq., of Hedgerly Park. They were supposed to be poisoned from eating of the American rhododendron, a specimen of the leaves of which I enclose for your inspection. These had been taken out of the rumen of the sheep

that had died prior to my attendance. Upon my arrival I found four sheep dead, and most of the others suffering from the effects of the plant.

The leading symptoms were—loss of appetite, suspension of rumination, grating of teeth, ears drooping, frothing at mouth, slight discharge from nostrils, incapability of standing and keeping the head erect. The bowels were constipated, and tympanitis was present, but not to any great extent. I immediately proceeded to give the animals stimulants, such as Sp. Ammon. Aromat., Ess. Zingiber, &c. Within the hour the animals walked home to the farm premises, the distance of half a mile. After their arrival I had them comfortably housed, and administered oatmeal gruel with some additional stimulants.

On making a *post-mortem* examination of the four, I found in the rumen of each a quantity of the leaves of the shrub. The abdominal and thoracic viscera were to all appearance perfectly healthy; so also was the brain. I ought to add that the place where they were pastured was so bleak and cold that I had at first a doubt whether this might not be the cause of their illness, they having previously been *warmly sheltered*.

On referring to my father's note-book, I find that Philip Rose, Esq., of Rayner's Penn, had on the eve of the 24th of December, 1859, a flock of sheep removed from off the arable land, where they were feeding on mangel-wurzel tops, to a piece of old grass, and that during night a severe frost prevailed, which was accompanied with showers of sleet and snow. In the morning the whole of the sheep were affected in a similar manner to those named, and twenty-eight out of them were obliged to be fetched home in a cart. They were treated in a similar manner. It was my father's opinion that their illness arose from the frosted condition of the old spiral points of the grass chilling the stomach. Although one was dead when my father arrived, none died afterwards, but several of them were some days before they recovered. As soon as they began to ruminate their natural powers returned.

DISEASED ŒSOPHAGUS OF A COW.

By G. Breakell, Veterinary Surgeon, Garstang, Lancashire.

I have sent per rail a box containing a portion of the œsophagus of a cow, killed by Mr. Rowcliffe, a butcher of this town, to-day.

You will find the mucous membrane to have assumed a most peculiar form nearly throughout its entire extent. I regret the parts are so clumsily cut away; but I did not see them until they were taken from the beast.

From the casual notice I took of it, it appears to me that the epithelial coat of the membrane has, from some cause, become greatly developed. Of course the abnormal change cannot be malignant in its nature, or the cow would not have become fat.

A brief history of the case is as follows:—The cow was of the short-horn breed, five years old, and was noticed, about twelve months since, to lose condition. This continued for two or three months; but the owner, not thinking there was any particular disease about her, contented himself with giving better food, and meal balls amongst other things.

In September she commenced vomiting her food. At that time she was having turnips in the shippon, and eating after-grass when out.

My opinion was then asked. I told the owner to give up the turnips, and let the beast have gruel and mashes, and also prescribed an ordinary aperient draught.

After this she did not again vomit, but occasionally had slight attacks of tympanitis. These were always relieved by giving a tar-ball or two, which is a favourite remedy for horses with the farmers in this neighbourhood.

The animal gradually fattened, and was killed, making good beef.

So far as the owner recollects, the animal was never choked, either by turnips or potatoes.

[Cases of this kind are of rare occurrence, and in the course of our experience we only remember to have met with two or three of them. In none of these, however, was the history sufficiently explicit to throw much light on the cause. The college museum contains a specimen, the counterpart of the one sent by Mr. Breakell, but very little appears to be known about it. These growths from the mucous membrane

of the œsophagus have much of the character of warts, and may, perhaps, be correctly described as essentially consisting of hypertrophy of the papillæ. They are irregular in outline, and vary greatly in size. They do not, however, follow in their development the normal folds of the lining membrane, but rather cross these at right angles, so as to surround, as it were, the interior of the tube. This arrangement is, doubtless, by its greater mechanical impediment to the passage of the ingesta, one of the chief causes of the remarkable dilatation of the œsophagus which accompanies these growths. The dilatation is generally associated with atrophy of the muscular coat, leading to further loss of power of the œsophagus, both in deglutition and rumination. Hence an additional reason of the great loss of condition of the affected animal.

Although very vascular, the growths, on their exposed surface, differ but little from the colour of the lining membrane of the tube, arising from the circumstance that they also are covered with a dense layer of scaly epithelium. They show no tendency to degenerate, nor to separate from their attachments, but rather, like a "crop of warts," to spread and involve more and more of the mucous membrane. It is doubtful whether they have their origin in slight injuries done to the interior of the œsophagus, or in some constitutional cause; but whether the one or the other, they are non-malignant in their nature. Similar growths are occasionally seen upon the strong muscular bands which separate the rumen into its several compartments. They are here, however, more limited in the extent of surface which they cover, although we have seen them rise equally as high. Even in this situation they interfere but little with the function of the organ.—Eds.]

ENLARGED LIVER AND SPLEEN, &c.,

By J. Barnett, Veterinary Student, Market Drayton.

In a late communication I gave an opinion that some hydatids I found in a liver were not white, but of an amber colour. I am now in a position to confirm that statement, having since seen a liver containing hydatids that were white, the difference being very apparent. In this last case I found but few of the entozoa, but several were of great size, one alone containing little short of a quart of fluid.

I have just been examining a liver weighing 140 lbs. The spleen taken from the same animal was also much diseased, weight 13½ lbs.

A short time since I removed from the carcass of a horse mesenteric and other tumours, weighing 49 lbs. The animal had suffered from anasarca, and was found to possess a dilated right ventricle. His appetite was always good, and, contrary to what might have been expected, he never appeared to suffer from abdominal pain.

I have purposely omitted all details in the above, being conscious of having of late (for a junior) occupied too much of your space. My object in again troubling you is to record the weight of the diseased liver, which I never saw exceeded.

OPEN HOCK-JOINTS.

By R. J. Bolton, Gibraltar.

A somewhat extraordinary case fell into my hands of a well-bred stallion, exported from London *en route* to Teneriffe, per steamer "Sydney Hall." He was intended for breeding purposes, and was in company with two mares, on board for ten days. He was entrusted to my care by his owner, who informed me that his horse's hocks were injured, owing, in his opinion, to some foul weather experienced on the passage. I proceeded with him on board the steamer, and at first I intended taking with me a solution of cupri sulphas or zinci sulphas, but upon second consideration deemed ocular demonstration desirable.

To my utter surprise, I found that the horse had *open joints*, and upon opening the door against which he had supported himself, he fell on his haunches in a complete state of exhaustion, and the synovia, at each motion of his limbs, spouted out with great force. The box, certainly, was padded inside, as is usually the case, but was, in proportion to the inmate's length, too short. The constant friction of his hocks against the door-padding had hourly increased throughout the voyage, and the animal was labouring under considerable excitement, plunging the fore part of his body against the front cross-beam, in a manner most pitiful to behold. High irritative fever was also present; his hips were severely bruised, the countenance anxious, and, in short, the state of the poor beast was such as to draw from me the

plain advice to land him at once, if possible, and thus give the owner a chance of saving the animal's life, as he could not survive the remaining portion of his journey in that state. Proper arrangements having been made with the captain, the owner consented to land the horse. It was with great difficulty indeed that he was removed to a nice large airy loose box; and on my return home I found that inflammation of the lungs was present. I immediately had a gallon of blood abstracted from the jugular vein; high, dry bedding was placed at his disposal, and right gladly did the poor sufferer embrace the opportunity afforded him for rest. The venesection had, in a couple or three hours afterwards, abated to a certain degree the symptomatic fever, and the change of position was as gradually producing a good effect. As it was dark when the horse reached the stable, and it being impossible in the short-sized ship-box properly to examine the hocks, I was somewhat surprised the next morning at finding maggots in the wounds. After cleansing them as well as I could, I endeavoured to prevent the escape of synovia, and by incessant attention, strove to lessen the inflammatory excitement. It being extremely painful for the horse to stand long together, and knowing that in all diseases, both in the man and horse, nature always performs her part, my endeavour was to impart strength to the system, and thus naturally to arrive at a stage when, of his own accord, without having recourse to compulsory means, the horse would stand.

With a view of keeping inviolate the trust placed in me by his absent owner, I watched the patient night and day, and about the 4th or 5th day I was gratified at finding I had succeeded in effecting an improvement in him.

[Much of a private and personal nature now appears in the communication, which we omit, because not of sufficient interest to our readers. There would seem to have been uncalled for anti-professional and other interference, the result of which was that the horse was placed under the care of another practitioner, who, contrary to the most earnest advice of Mr. Bolton, determined to place the animal in slings, and he died shortly after "in great agony." Mr. Bolton states that during the Crimean war and Indian rebellion, hundreds of horses were placed under his charge at sea, and at the conclusion of the former, his services were admitted to have been "advantageous to the government," and at the termination of the latter he received a reward for his services from the Bombay Government, so that the

restraint and inconvenience to which horses are put by being slung, he was no stranger to. We append as much as is necessary of the reply of the owner of the horse to Mr. Bolton, which to him must have been both highly gratifying and very satisfactory.—Eds.]

"Santa Crux, Tenerife,
"*October* 13*th*, 1864.

My Dear Sir,—I have just received your letter of 25th September, containing the disappointing news of the death of "Abbosafordior."

In the first place let me assure you that I exonerate you from *all* blame. Whatever you have done I am quite assured you did it with the best intentions. I was quite aware that the poor animal's condition was highly precarious at the time I left him in your *sole* charge. Mr. P—— was quite mistaken in imagining that I expected him to feel any responsibility as to the treatment of the horse.

* * * * *

I quite, however, understand your delicacy in yielding to Mr. P——'s wishes, and assure you that the only sentiments which I have in connection with yourself are sorrow that you should have had so much trouble in vain, and gratitude that you should have taken so deep an interest in my favourite's welfare.

I thank you for your kind offer of services, and shall not forget them should I ever be in need of your assistance.

With best wishes, I remain, my dear sir,

Yours very truly.

Facts and Observations.

Destruction of Skin Parasites.—The insecticide powers of the essential oils have been long known. M. Maufre has found the oil of bergamot an effectual and almost instantaneous cure for itch, and also for the destruction of lice. M. Aubé advocates the use of the oil of turpentine with essence of lemon, and M. Gras recommends the essential oil of lavender. Common fixed oils applied to the skin will cause the destruction of these insects, but it will be rendered far more effective by the addition of some of these volatile oils.

Inhalation of Oxygen Gas.—Dr. Richardson states that fresh oxygen gas, obtained from the chlorate of potassa, increases the activity of the functions when inhaled, but if exposed to ammonia, decomposing animal matter, or even living animals, it loses its activity, and no longer combines with the blood. Alcohol, chloroform, opium, and certain alkaline products formed in the blood by disease, prevent the absorption of oxygen, and death not uncommonly takes place from this cause. The death of animals in pure oxygen, he avers, is not by a narcotic poison, but by a process of negation.

A new Disinfectant.—It is stated that basic nitrate of bismuth, when applied to suppurating wounds, has been found to remove all offensive smell, and hasten the healing of them. To scrofulous sores it has also been applied with much benefit.

Action of Phenic Acid.—M. Déclat has found the action of phenic acid, as a general disinfectant to wounds, to be most useful, and its application to sloughing wounds most remarkable. A solution of it as an injection, in some affections of the bladder, has been found by him beneficial, as well as in obstinate eczema, and other skin diseases.

The Yak.—Dr. Collingwood, in a paper on acclimatization, in the *Quarterly Journal of Science*, states that, among the useful animals to which the Société d'Acclimatation of Paris have directed special attention; the yak is conspicuous, a native of Thibet, a creature possessing a most valuable skin, or fleece, and which is found to breed very readily in the garden of the society; and although it at present yields but little milk, it is hoped that, in time, the influence of domestication may render it more valuable in this as in other particulars. Several prizes are offered for the breeding of these animals, and also for crosses between yaks of pure breed and mountain cattle.

Experiments also are in course of trial upon Angora and Egyptian goats, Caramanian and Merino sheep, &c., which are reported to be in a fair way of success. Similar attempts are being made to utilise the wild ass, and Burchell's zebra, quagga, &c.; and prizes for the successful breeding of these animals in a state of captivity or domestication are offered, as well as for crosses between them and the mare and ass.

Poisoning of Cattle with Hemlock.—The editor of the *Western Morning News* says, "We have received accounts

from various places of the poisoning of cattle by roots of hemlock. A few days ago, Mr. Elliott, of Colesworthy Farm, Islington, had six fine heifers poisoned by this root. A short time previously, Mr. Rowell, of Hearder Farm, Teigngrace, lost three fine bullocks from a similar cause. In each case it appears that in cleaning out the hedge-troughs a quantity of hemlock roots had been thrown over the field in which the bullocks were grazing. Farmers would do well, when cleaning the hedge-troughs, to have these poisonous roots removed to some inclosure, for, when eaten by cattle, the consequences are fatal.

Structure of Nerves.—M. Roudanoosky states that the primitive elements of nerves are tubes having a pentagonal or hexagonal configuration. As to their constitution, he says that every nerve has a substratum of brain-matter, and also of the spinal marrow, and probably of the ganglionic matter also. The gray matter, he says, is the fundamental nervous substance, and plays the principal part in the functions. Energetic poisons, like strychnia and nicotine, affect the nervous cellules; while other poisons, such as opium, chloroform, and perhaps alcohol, modify the myeline.

Use of Salt in the Organism.—Undoubtedly, says Dr. Playfair, salt is essential to the processes of digestion and assimilation, although we cannot explain more than a few of its actions. We know that it aids the absorption of water into the system by the process of diffusion; it supplies the acid which the stomach requires for digestion; it gives soda, for the formation of bile and of pancreatic juice, and it helps the solution of albumen; and yet the whole amount of salt in the body does not probably exceed four ounces.

Production of Fibrin.—Dr. Beale considers the production of fibrin to be due to the death of the minute particles of the living matter of the white and small blood-corpuscles, which takes place, under ordinary circumstances, when blood escapes from the vessels of the living body; in fact, it is one of the consequences of the first decomposition which the blood undergoes after death. Such decomposition may also occur, under certain circumstances, in the body itself.

Magnesium Wire.—The use of magnesium wire as a source of illumination for photographic purposes, &c., gives it a considerable degree of importance. Its rich and beautiful light during combustion contains actinic rays in abundance, and brings out every detail of the object to be photo-

graphed. Magnesium is, unfortunately, dear as yet; but science will, no doubt, soon remove this objection to its use, and bring it within reach even for many ordinary purposes. Not being ductile, in any circumstances yet known, it is to be obtained as wire only by forcing it in the fluid state through holes in a steel die. But in this state it is highly oxidizable, and the particles of oxide become incorporated with the wire; which, it is probable, is the cause of that sudden extinguishing of the light that has been found the source of so much inconvenience. To obviate this difficulty, the best means as yet discovered is the addition of a small spirit lamp to the magnesium lamp, the arrangements being such that the magnesium wire is transmitted at the proper speed into the alcohol flame.

Detection of Nitro-Benzol in Oil of Bitter Almonds.—Sodium disengages gas from pure oil of bitter almonds, the quantity disengaged being increased by the presence of alcohol, and white flocks are produced. But if the oil of bitter almonds contains nitro-benzol, there is formed instantaneously a brown deposit, which is dark in proportion to the amount of nitro-benzol.

Production of Diabetes by Cold.—Dr. Bence Jones has produced diabetes in rabbits by surrounding them with ice, and thus arresting the process of oxidation going on in their bodies. The urine of rabbits contains a little sugar, but the quantity was notably augmented by exposing them to a low temperature.

The new method of Preserving Meat.—We adverted to this in our last number. The process is very simple, and occupies but little time. In an experiment made by Dr. Morgan, in the lecture-room, a bucket of brine, which had been raised to the height of twelve feet, and was connected by a tube with the left ventricle of the animal, issued in three or four minutes from the right ventricle, having driven the blood before it.

The French Government has tried Dr. Morgan's method of preserving entire sheep and oxen, and the results of the experiments have been highly satisfactory. The animals killed and injected last August have been eaten recently, and the meat was found to be excellent—especially the beef-steaks, say the reporters. We should hope this process will soon be in use in South America and in Australia. The South American Beef Company should look to it.

Oxygen Gas obtainable without Heat.—At a late meeting of the *Pharmaceutical Society,* Mr. J. Robins read a paper on the above subject. The compound to be employed he has named *Oxygennesis.* It consists of the peroxide of barium and bichromate of potash, upon which any of the dilute mineral acids being poured, oxygen will be immediately given off, as freely as carbonic acid gas from a carbonate. Mr. Robins states that it is not absolutely necessary that the above compounds be resorted to as other analogous ones may be substituted for them.

Spontaneous Generation. — The commission appointed to review the experiments of M. Pasteur, and his opponents, MM. Pouchet, Mussel, and others, relative to the question of "*Spontaneous Generation*" brought up a report. It was entirely in favour of M. Pasteur, and therefore opposed to the theory or facts of spontaneous generation. The report establishes that fermentable liquors may remain either in contact with confined air, or exposed to air which is often renewed, without changing; and that if changes do take place, and organic beings are generated, this result cannot be attributed to the gaseous elements, but must be caused by solid particles introduced with air, and of which it may not be completely deprived. Some of the experiments were objected to by the supporters of heterogenesis, and the commission will make further researches when warmer weather arrives.

Test for Tartar Emetic —M. Claus states that the perchloride of iron causes a yellow colour in a strong solution of tartar emetic, and with a dilute solution a yellow precipitate which appears to consist of basic chlorides of antimony and iron, and some tartar emetic.

Rapid Absorption of Substances by the Tissues. —Dr. Bence Jones states that lithium given to a guinea-pig eight hours before death was found in the crystalline lens. In another pig, killed two hours and a half after its administration, its presence was shown in the cartilage of the hip. In a third, killed after an hour, its existence was faintly demonstrated in the hip and knee, but in the aqueous humour of the eye very distinctly.

THE VETERINARIAN, MAY 1, 1865.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

ON THE VITAL PRINCIPLE OR FORCE.

Two forces that do not obey the same laws, however similar they may be, cannot be said to be identical in their nature.

As the nervous fluid, so called, is, we are told, arrested in its passage by good conductors of electricity, while it readily traverses non-conductors, can electricity and it be one and the same force?

As the body while alive is capable of resisting the influence of chemical agencies, yet when it is dead these soon effect its decomposition, must there not be existent in the organism some force or power that prevents this change taking place?

What is this power or force? This is a question we know much easier put than answered. We have before adverted to it,* and then expressed our conviction that we should be tempted to return to its consideration. We, however, confess that although it has been the subject of much reflection, we are as far now from being able to answer the question satisfactorily as ever we were.

The ascertaining of the cause or principle of vitality is unquestionably surrounded with difficulties, and, perhaps, ever will be. It cannot be disputed, that in the organism there exist agencies or powers closely allied to some of the so-called physical forces, and Dr. Carpenter says, they only differ from them on account of their peculiar relations to matter; still they have not yet been proved to be one and the same. In the body we also meet with exemplifications of the mechanical powers—the lever in the action of the muscles on the bones; the pulley in the various joints, and

* *Veterinarian*, vol. xxxiv, p. 86.

others. The eye beautifully illustrates the laws of optics, while those of hydraulics and hydrostatics obtain in the circulation of the blood and in respiration. Chemical action is seen in the changes reciprocally effected by these two last named upon each other; the blood becoming deprived of its excess of carbon by the union of it with the inspired oxygen. But what is the agent that brings about the combination of these two elements in the blood, which *ordinarily* have no disposition to unite? Elevation of temperature we know will do it, so will electricity, and it will also take place when they are in a nascent state.

Again, as there are conditional circumstances necessary for the production of the one, so there are for the other. Of all the forces existing throughout nature, the so-called vital force is the most interesting and the most wonderful, while at the same time it is the most inexplicable. It not only gives rise to those well-known, although not well understood, peculiar phenomena designated vital, the correct development of which, whether in an animal or a vegetable, eventuates in generation and the maintenance of health; but we also know that there are certain conditions which militate against this, and by depressing the living principle, allow disease and death to take place. These various antagonistic agencies are, for a time at least, resisted by the living body, and if proper aid be given, it can withstand their destructive influence altogether, and health soon returns. At other times we have only functional impairment as the result; yet this in the end may lead to organic change.

Dr. Harley, speaking of vital action, says:

"Vital action has been in medicine what catalytic action was in chemistry, what ether was in physics—an imaginary principle employed by ignorance to hide ignorance. It is, in fact, a name instead of an explanation—an imposition which positive science has detected and exposed. There are many things in nature which we cannot explain; there are many things in medicine which we do not comprehend; but he had no sympathy with those who preferred to impose upon their reason visionary agents, rather than feel that nature's works were too great for them to understand. However much they had yet to learn, he believed that the intellect of man would yet solve the problem of organization, and that the practice of medicine would ere long rival any of the exact sciences of our times. Let them look for a moment at what recent physiology had done. Had it not given them a clearer—he might say a simpler—idea of what life

was than they previously possessed? Had it not shown them, for example, that their limbs moved in obedience to mechanics; that the crystalline lens acted according to the law of optics; that their heart's action was within the comprehension of hydraulics; and that respiration, digestion, and absorption were performed on purely chemical and physical principles? In a word, recent physiology had pointed out to them that the phenomena of life were the effects of a combination of the natural laws which governed the universe at large. It had shown them that every organism in the possession of life, no matter whether it were at the bottom of the vegetable or at the top of the animal scale, was undergoing never-ceasing change; and that, notwithstanding the apparent stability of its frame, every particle composing it was transient in the truest sense of the word. The appearance of identity which the living organism presented was an illusion, for every day, every hour, every moment, its parts were wearing away. No movement could be made, no function performed, without a destruction of matter. Every breath we drew, every word we uttered, every thought, was accompanied by a metamorphosis of material. Well might we exclaim, "How wonderfully, how fearfully are we made!" Life was one perpetual state of death; and if to live was to die, so to die was to live, not only in a spiritual, but in a physical sense. For what was the disorganization of the dead animal or vegetable being but a change from death to life? Even life was everlasting, at least the animal organization did not begin to live at the time of birth, at the period of quickening, nor at the moment of conception. No, the life that was given to the ovum was transmitted by the parent, not generated. Indeed, there was but one creation of life of each species; and from the beginning until now the same life had been handed down from parent to offspring, in one uninterrupted chain, and that chain would last as long as the species existed. They could not, at the present day, entirely separate the psychical from the physical, the spiritual from the material. They could not tell the how, the where, or the why, as thought sprung into existence; but physiology told them, science told them, all nature told them, that a change in matter had accompanied the evolution of that thought, and that without matter the thought could never have been evolved. The physicians of to-day were neither conceited theorists nor proud empiricists, but humble seekers after truth; and ill did they merit the ignominious title of unbelievers, which ignorance occasionally hurled at them. Were they irreligious, because they read the book of Nature and believed in astronomy, which told them that the sun did not move; geography, that the earth was not four-cornered; geology, that the earth was not created in six days? Surely not. Was a machine less perfect because they understood its construction? Was man less the work of his Creator because they compehended his organization? On the contrary, far from destroying their feelings of veneration, a knowledge of Nature's laws but rendered them more acute, by unfolding to them the immeasurable distance that separated the feeble works of man from the mighty works of God."

The existence of special vital forces have been of late much combated. Mr. Grainger contends against there being any such, yet he admits a peculiarity. He considers:

"That organic matters are altogether peculiar in their chemical constitution, attributable to what is often termed the chemistry of life, and that

nothing like them is found in inorganic matter; and also another prevalent opinion, which is considered by many distinguished physiologists as embodying the most important proof of the existence of a vital principle, and which relates to the internal arrangement of the parts of which organized structures and inorganic bodies are respectively composed. There could be no doubt that in this, and perhaps in other countries, the overruling influence of the Hunterian doctrine of a vital principle had most powerfully tended to the propagation of the erroneous views which had been touched upon. He need not point out to many of his auditors that the great instances adduced by Hunter in support of his theory of life, and to which he recurred again and again in his writings, relates to the causes of the coagulation of the blood, the resistance of a freshly-laid egg to freezing, and the power which enables the stomach during life to resist the violent action of the gastric juice. In each of these instances Hunter, as it is well known, attributed the phenomenon to the defensive powers of life, to the vital principle, and in the then state of knowledge it was scarcely possible to draw any other inference, so plain appeared to be the evidence, and so inevitable the conclusion. It was, however, very remarkable and instructive that modern science, which in such a multitude of instances had enabled them to distinguish the real from the apparent, had demonstrated the fallacy of all these instances. Thus Dr. Richardson has shown that the coagulation of the liquid fibrine was owing to the loss of its ammonia, whilst Mr. Paget, by his interesting experiments, has proved that the fresh egg of the hen remained unfrozen when exposed to a temperature several degrees below thirty-two. Not because it was alive, but because the mechanical disposition of the albumen, as in the similar instance of the leaf of a vegetable, prevented the watery particles running together into crystals of ice. From these and similar considerations he was satisfied they might rightly conclude that, save and except the sentient and truly living soul, every part and organ of the human body was formed of the common elements of matter, combined by pure physical and chemical forces, and acting exclusively in obedience to those powers."

The way in which mental actions are associated with the physical forces going on in the organism is ill understood. That such a union exists is incontrovertible, and equally so that a difference exists between them. It is obvious that the mind affects the body and the body the mind. Even the act of thinking, we are told, cannot take place without a change in the substance of the brain. The term "vital force" has been objected to as conveying no precise meaning, and it is thought to be better at once to confess our ignorance than resort to it; yet as a *term of convenience* it may be employed; for take life away, and all phenomena attendant on vitality and organization soon cease. Nevertheless, we cannot remove from our minds a conviction that a power exists in a living organism over and above those which give rise to the chemico-physical force. Further, that the passage of electrical currents, however long con-

tinued, and whether feeble or intense, through albuminous solutions, will never produce a living being; and that there is no such thing as spontaneous generation. All this may, with us, be the result of early education, yet have we given to the subjects mature thought. We heartily agree with Mr. Higgins, that "If life were made up of forces similar to those which act in various ways both in organic and inorganic matter, we might expect to find the transition of things inanimate to things animate the same in character with all other transactions in nature; the border-land would be occupied with semi-animate materials, and semi-mineral vegetables or animals, with instances of equivocal life and products of doubtful organization. Whereas, from the highest to the very lowest organism, the phenomena of life are distinct and unquestionable." And these phenomena, we may add, are not capable of being explained by a reference to chemico-physical laws, however near they may approximate thereto, and seemingly do so. We hold with Mr. Higgins, that the vital principle is a thing *sui generis*, and we may be permitted to append his general summary to this question:

"1st. The unparalleled hiatus which exists between things animate and things inanimate.

"2nd. The great dissimilarity between the properties of the imponderable and those of vitality.

"3rd. The difficulty arising from the hypothesis that the embryo of a living thing is developed only by the agencies of the known forces.

"4th. The permanence of form and structure observable during many generations of the same species.

"5th. The absence of any indications as to what becomes of the vital principle of death.

"6th. The periodicity of life."

We know that many conjectures have been hazarded to account for the origin of vitality, some of them seemingly profound, others almost peurile, and both alike forgetful of, if not ignoring, the Great First Cause of Life. Some philosophers assert that this our earth, with the other planetary bodies, was once gaseous matter, containing within itself

the germs of vitality, but it has now become, in part, solid. Others have thought the globe we inhabit once belonged to the sun, from which it was detached in a molten condition, and they have asked, Did the incandescent world contain latent within itself the elements of life, and would one of the consequences of its refrigeration be the development of organic forms? This localisation of the principle of life, giving to it a circumscribed fixity, savours of materialism, and seems to set limits to the power of Omnipotence; as if He who made the larger body, the Sun, could not as easily make the lesser one, the earth, filling it with beings of life and beauty, clothing its surface with vegetation, giving to animals instincts that determine their habits, and cause them to supply their common wants; culminating in the higher order, man, to whom He also imparted a never-dying principle, a soul. All this we are told He did, and having discharged "the six days' labour of a God," pronounced it "very good."

Do we, then, on account of their abstrusity, denounce scientific investigations? Most certainly not. On the contrary, we are earnest advocates for the closest inquiry being instituted, believing it to be both the duty and privilege of man to do so, and that all truth necessary for him is attainable. The difficulties to be surmounted in acquiring it should ever act as incentives, so as to enable him to account for phenomena that present themselves, and to explain their mode of operating; for after all the knowledge he may have obtained, there will remain much, very much, that is altogether inexplicable.

And here we must be contented to leave the subject. If we have been unable to remove any of the mists that envelop it, we are no worse than others who have in vain attempted to dissipate the veil that enshrines its mysteries; which, possibly, are too deep for mortal ken to fathom. We often yield assent to propositions without due consideration; a love of ease, or a deference to the opinions of others inducing us so to act, forgetting the lines of Butler,

> "He that complies against his will,
> Is of his own opinion still."

Extracts from British and Foreign Journals.

REPORT OF EXPERIMENTS MADE UNDER DIRECTION OF THE LORDS OF THE COUNCIL AS TO THE VACCINATION OF SHEEP, AND AS TO THE INFLUENCE OF SUCH VACCINATION IN PREVENTING SHEEP-POX.

By James F. Marson, Esq., F.R.C.S., Resident Surgeon of the Smallpox Hospital, and

Professor Simonds, of the Royal Veterinary College.

(*Continued from p.* 245.)

Mr. Cook, farmer, of Litcham, vaccinated with success two of his sheep. One died afterwards from a natural attack of the sheep-pox, and the other took the disease from inoculation. Mr. Cook obtained current vaccine lymph from a surgeon for the purpose of the experiment.

Bearing also upon this part of our Report, we extract the following from a letter in our possession:—"During the year 1848 variola ovina prevailed to an alarming extent among the flocks in Norfolk, and as vaccination was said to be a prophylactic, it was extensively put in practice. Having, however, great doubts as to the possibility of communicating the vaccine disease to the sheep, I determined on putting it to the test of experiment. A farmer having lent me three hoggets to practise on, I procured some vaccine lymph from the National Vaccine Establishment, and vaccinated one of the sheep in eight punctures; at the same time I vaccinated a child. Two of the punctures on the left flank of the sheep had a slight redness on the tenth day, but no vesicle arose, and the little redness was all going on the following day. The punctures in the child's arm took the regular course, thus showing satisfactorily that the lymph was good. I next vaccinated, directly from the child's arm, another of the sheep in seven places. On the fifth day each puncture presented a raised spot, the base of which was about the diameter of a sixpence. No vesicle formed on any of these spots. On the seventh day the effects had vanished, and nothing but the punctures were visible. The third sheep I vaccinated with lymph taken from vesicles on a cow's teats, but as no effects were produced, it is probable that the cow was not the sub-

ject of true vaccinia, although two or three other cows were similarly affected in the same dairy. Another surgeon endeavoured to vaccine sheep, and obtained similar results to my own. We may fairly conclude that the numerous vaccinations which were performed hastily, and necessarily with less care in some parts of the county, would prove of no practical utility."

We now pass on to notice the published statements of Mr. Allan Ramsay, surgeon, of Shelford, Cambridgeshire, and also those of other surgeons with whom he was associated in 1848, in the vaccination of sheep; these gentlemen being the principal advocates of the system.

During the late outbreak of sheep-pox in Wiltshire, Mr. Ramsay sent the following letter to the *Standard*, which again revived the question of the vaccination of sheep, and led also to a correspondence between himself and Mr. Kent Norris, Hon. Sec. to the Wilts Mutual Association for preventing the Spread of the Smallpox in Sheep.

"*To the Editor of the 'Standard.'*

"Sir,—I have just read a letter in your journal of last Monday, headed 'Smallpox in Sheep,' signed 'J. T. Twynam, Land Agent,' wherein Mr. Twynam says, 'why not try vaccine as a mitigant?' I beg to inform that gentleman that in 1853 (? 1848), during an outbreak of smallpox, vaccination was fully and fairly carried out, and its protective power tested and established. Hundreds of sheep and lambs were vaccinated by me and by others under my superintendence. Valuable tups belonging to Jonas Webb, after having been vaccinated, were sent into flocks where smallpox was known to be raging (one, I recollect, that belonged to the Duke of Grafton). Sheep and lambs, after being vaccinated, were penned on my own premises with others labouring under smallpox in its most virulent form, and in no single instance did they take the disease, or become in any way affected. If flock-masters will write to Mr. Jonas Webb, of Babraham; Mr. Samuel Jonas, of Chrishall Grange, Royston; or to Messrs. Hurrell, Long, and Rowley, of Harston; Mr. J. Ellis, of Triplow; Mr. John Headly, of Whitelesford, all in this county; or to Mr. Henry Overman, of Weasenham; Mr. E. Oldfield, of Foulden Hall, both in Norfolk; they will get such a statement of facts with regard to the protective power of vaccination as will, I am sure, deter them from introducing so loathsome a disease as smallpox into their flocks by inocu-

lation, recommended though it be by Professor Simonds or any other Veterinarian.

"I am, &c.,
"ALLEN RAMSAY, L.R.C.P., M.R.C.S.

"Great Shelford, Cambridge,
"*September, 23rd.*"

Firstly, we have to remark with reference to the statements contained in this letter, that at the time it was written, Mr. Ramsay had probably forgotten that both of Mr. Webb's rams, which were sent to the Duke of Grafton's, took the sheep-pox naturally. From memoranda in our possession it appears that on their arrival at the Duke's farm they were put with some ewes which had been the subjects of sheep-pox about ten weeks before, and which were believed to be now in a healthy condition. The contrary, however, proved to be the case, and the result was that the rams became infected. It is true the malady assumed so mild a form that the lives of the animals were not endangered, but this in no way lessens the value of the fact of their having contracted the disease.

If reference be made to Mr. Jonas Webb's letter, dated September 29th, 1862, and published in the *Mark Lane Express*, and other papers, it will be seen that he does not assert positively that none of his rams sent out contracted the smallpox; he merely says that he "did not lose a ram, nor was he aware that any of them took smallpox; if they did, it was in so mild a form that he was unaware of it."

With regard to the other gentlemen mentioned by Mr. Ramsay, we have already disposed of Mr. Henry Overman's cases of vaccination, and Mr. Edmund Oldfield would appear to have little or no confidence in the prophylactic power of the operation, for in one of his letters to the *Norwich Mercury*, dated November 8th, 1848, we find that he states—"From what I have seen of sheep which have been vaccinated by medical men from points, it appears to me to be of no use, as it takes so little effect on the animal."

The statements of Mr. Jonas, Mr. Headly, Mr. Hurrell, and Mr. Rowley, all of whom wrote to the Wiltshire papers in 1862, in favour of vaccination, merely show that they each exposed a vaccinated sheep or two for an unexplained length of time, to the infection of sheep-pox, and that these sheep escaped taking the disease. This fact, in our opinion, possesses no value whatever, in rightly determining a question of this kind, as, owing to the varying susceptibility of sheep

to contract the smallpox, the same thing may be said of hundreds of sheep which had not been vaccinated.

Thus, Mr. E. Oldfield states, in one of his letters, dated November 29th, 1848, and published in the *Norwich Mercury*, that Mr. Barton, of Throxton, writes—"My ewes were inoculated, but my hoggets were not; yet, although they were in an adjoining field, and lately in the same field, I have not had a single case among them, and they have not been vaccinated." He goes on to observe—"A neighbour of mine bought some shealings, and turned them into a field with his inoculated ewes, and they also have escaped."

(*To be continued.*)

THE PROGRESS OF ZOOLOGY.

By Shirley Hibberd.

(*Concluded from* vol. xxxvii, p. 842.)

It will be observed, that the most notorious cases of hybridization and variation occur in connection with the interference of man with the proceedings of Nature. Wild varieties are plentiful, but the range of variation is more limited. The first object of man, whether he subjects animals to an artificial mode of life for profit or amusement, is to cause them to produce varieties. One way or another he invariably makes attack on the organs of reproduction, or attempts a diversion of their function from its normal course; and it is worth considering whether he does not unintentionally bring into action circumstances that will some day bring about an extinction of his varieties, unless their vigour is occasionally replenished by the infusion into it of wild blood. The frequent crossing of the most valued varieties of domestic animals indicates somewhat of a recognition of this fact, that varieties tend to die out. In the case of the animals used in agriculture, the practice of castration must have some effect in diminishing the vigour of races. The males castrated are at once removed for ever from the domestic circle, and no variation or deterioration of the race can possibly arise through their communication of a diminished vital force. But their removal throws the task of procreation on a fewer number of males, and a given amount of procreative force is of necessity spread over a larger surface; in other words, every ram, bull, and stallion, has to beget a larger number of progeny than it

would do in a state of nature, and that progeny, it seems fair to assume, must inherit less of the initial vigour which is the foundation of the physical constitution of the individual. Variation itself, apart from this consideration, appears to be in the majority of cases congenital, and so representative of the circumstances attending the physical origin of the individual life. The story in the 'Cloud of Witnesses' of a man yielding milk when a child was put to his breast during the persecution in Scotland, receives some confirmation from the account given by Humboldt of a human male that gave forth milk. Livingstone tells of grandmothers suckling grandchildren, which are cases quite to the point, and evidently of the class of congenital variation. In the individual, castration has an immense influence in modifying all the characteristics peculiar to the male sex; and barren females and impotent males, whether of the genus *Homo*, or any other genus, are influenced in their whole physical character in a manner consistent with their exceptional sexual condition. Among our domestic horned animals, the size and configuration of the horns vary so much from the normal type, that we have a tolerably safe index thereby to the whole pedigree of the races, and congenital peculiarities are most strikingly exhibited in the variations which the horns exhibit. It is said, that if a stag is castrated when his horns are in a state of perfection they will never be shed; that if the operation is performed when the head is bare, they will never be regenerated; and if it is done when secretion is actually going on, a stunted, ill-formed, permanent horn is the result, more or less developed, according to the period at which the animal is emasculated.* In the museum of the College of Surgeons is the head of a fallow-deer, bearing a pair of half-developed horns, unequal in size, and wholly without palmations, but of unusual thickness, and covered with wart-like protuberances resembling incrustations. This animal was castrated; the horns were not shed at the usual time, and they shortly afterwards acquired the peculiar character which renders them so unique as specimens.

In horned animals that have never been subjected to domestication, there is a remarkable constancy of character in the development of the horns and their symmetry. The beautiful lyrate horns of the *Kobus maria* (Gray), a new antelope from Central Africa, afford a fair sample of the beautiful proportions and graceful outlines common to all horned animals in a wild state; and though no antelope from

* *English Cyclopædia*, Nat. Hist. Cervidæ, c. 843.

Central Africa could be expected to prosper in our climate, so as to form an addition to the embellishments of an English park, the southern regions of the same continent offer numerous species equally beautiful for economic as well as decorative uses in this country.

Another equally beautiful example is that of the Sable Antelope, *Aigocerus niger*, recently added to the collection of the Zoological Society from the mountainous region lying to the north and east of Southern Africa. The graceful crescent-like sweep of these horns, upwards of three feet in length, would, doubtless, soon undergo such modifications as would make an end of their beauty if the animals were reduced to domestication, and a breed secured for market purposes.

That we are not giving undue importance to this subject may be determined any day in Smithfield market. The tendency of breeding is to destroy horns altogether. Our best breeds of sheep are now hornless. Many of the most esteemed breeds of cattle are also hornless, and of those that still possess these appendages, the *short horns* are the most prized. In the few forests that still shelter the deer in Britain, fine specimens of horns are rare, and the "muckle Hart of Benmore," stalked by the late Mr. Charles St. John, was probably the last of its race for magnitude of frame and antlers. So the goat having altered less than any of the animals of the homestead, because less cared for than all the rest, retains his "crescented cornua" in all the breeds except the Spanish, which is the most fertile, the most improved according to agricultural standard, and the most easily managed, because by loss of horns rendered harmless. Bucks of this breed do occasionally wear the proper sign of Capricornus, but they are becoming more rare every day. But Nature defends her types with some obstinacy, and rather than part with them when the current of her aims is turned aside by the inventions of man, she sometimes pursues an opposite course, and, in the case of horns, the development is then such as to indicate a stronger probability of extinction than when horns are obliterated altogether. A curious example of this is the Galla, or Sanga Ox of Abyssinia, of which Bruce gave the first account, alleging that "the extraordinary size of the horns proceeds from a disease that the cattle have in these countries, of which they die, and is probably derived from their pasture and climate. * * * * His value then lies in his horns, for his body becomes emaciated and lank in proportion as the horns grow large; at the last period of his life the weight of his head is so great that he is unable to lift it up, or at least for any space of time." Mr. Salt, who saw these oxen in

Abyssinia, denied that the size of the horns was occasioned by disease; but Mr. Vasey, in his 'Delineations of the Ox Tribe,' insists that Salt's own evidence is against him, and he reproduces a figure from Salt to substantiate Bruce's account of the animal being both "lank and emaciated." This is usually considered to be a variety of the *Bos Taurus*, but there are some differences which Mr. Vasey considers sufficient to render the identity doubtful. In the specimen of the Sanga, in the museum of the College of Surgeons, which is not the largest that has been seen, the horns measure 3 feet 10½ inches in length round the outer curve; the distance between the tips is 3 feet 4 inches, the circumference at the base 1 foot 3 inches; and the distance between the bases at the forehead, 3½ inches. The last measurement is certainly favorable to Bruce's statement, for it implies a narrowness of the frontal plate quite out of proportion to the enormous magnitude of the horns. According to Livingstone, the Bakalahari, one of the oldest of the Bechuana tribes, possessed "enormous herds of the large-horned cattle mentioned by Bruce, until they were driven into the desert by a fresh migration of their own nation," and their loss of them may be attributed to their occupation of an almost rainless region, unfitted for the support of herds of cattle, rather than to any inherent weakness in the large-horned race. The Hungarian ox, which has horns measuring 3 feet 4½ inches, with a distance between the tips of 5 feet 1 inch, though known to be a variety of *Bos Taurus*, resembles the Sanga in the narrowness of the head, which is so neatly and delicately formed as to appear unfit to carry such enormous appendages. The Arnee, a native of the higher parts of Hindostan, has horns of still greater dimensions than either of the preceding examples of the genus *Bos*. A pair in the British Museum measure in length from tip to base 6 feet 6 inches and 6 feet 3 inches respectively, but the animal is reported to measure usually twelve, and sometimes fourteen feet from the ground to the highest part of the back.

Whatever may be the ultimate effect of hybridizing and domestication, society looks to zoologists for assistance in increasing the necessities and comforts of life by an utilization of acquired knowledge. The Zoological Society has done so much in the way of acclimatising animals suited to vary the supplies of our tables, that we look to it for something more; the contribution, for instance, of a few new dishes, for it begins to be a discredit to us that, having laid the world under tribute for its animal products, our staple animal food, should still comprise so small a round as beef, mutton, and

pork, varied only by inversion to pork, and mutton, and beef. The kangaroo, which affords the choicest of all dishes to the Australian squatter, has been found to prosper in English parks, and is remarkably prolific and manageable. We may some day see herds of elands among the pasture stocks, for it is now thoroughly acclimatised at Hawkstone and Taymouth; but there are numerous antelopes, Himalayan partridges, and species of *Ovis* and *Caprea* that prosper in this climate, and might become permanent additions both to our fauna and our food resources. The nilgai, the largest of the Asiatic antelopes, breeds freely in the Society's garden, and produces two fawns at a litter. The Sambur deer (*Rusa Aristotelis*) is proved to be as hardy in England as any of our domestic cattle. The Persian deer (*Cervus Wallichii*) promises to become permanently established. The Barbary deer (*C. Barbarus*) is bred by Viscount Hill, at Hawkstone, and has been seen in England in the form of meat. The pretty Ceylonese deer (*Hyelaphus porcinus*) breeds readily in confinement, and might be distributed for fancy culture as a household pet, and to vary the round of comestibles on festive occasions; and the magnificent species of wild sheep from Northern India and Tartary thrive so well in this country, that breeders might take note of them as offering the materials for new crosses with our domestic breeds, to stimulate with fresh vigour the future races of British sheep. It is odd that among nearly ninety species of antelopes now known, there is not one available for the purposes of the butcher. The ravages of pleuro-pneumonia and rot among cattle and sheep in this country, entail losses which, if the average annual aggregate were stated, would appear fabulous, afford at least one good reason for a bolder policy in the applications of zoological science. It would be a good beginning in such a desirable undertaking if the Zoological Society were to follow the example of the Horticultural, and appoint committees to cook and eat a few selected specimens occasionally, and having reported thereon, to arrange for the distribution of animals in pairs for peopling the parks and meadows, and, if possible, the paddocks, and waysides, and commons of Britain.—*The Intellectual Observer.*

PREVENTION OF DISEASES IN ANIMALS ACT—COLONY OF VICTORIA.

In the Australian colonies the diseases to which sheep and cattle are liable have caused for many years considerable anxiety to stockmasters; and the extent of losses arising from scab in sheep, and pleuro-pneumonia in cattle, has been much greater than those not conversant with the state of the health of stock in the colonies could have supposed. The Local Governments were early called upon to interfere, and it was confidently believed that it only required the vigorous application of stringent measures to extirpate disease. The Colonial Governments have from time to time passed Acts, arming inspectors with the most summary powers; hitherto, however, the results of the interference of the Governments have only tended to show that such a course of procedure is futile. The diseases have not been suppressed nor even stayed; both scab and pleuro-pneumonia have spread in those colonies where they first appeared, and while the Government interference has tended to render owners and those in charge of stock more careful of the general health of the sheep and cattle, cases of most arbitrary procedure on the part of inspectors, causing great injustice to individuals, have raised a feeling among flockmasters in several districts which may ultimately compel the Government to abandon all direct interference by inspectors appointed by, and acting under orders from, the Governors and Legislative Councils. In the colony of Victoria the Government has been lately very active in reference to the diseases in sheep.

An Act for the prevention of diseases in animals has been passed by the Legislature of Victoria which contains clauses of the most arbitrary and oppressive character, which, if strictly enforced, will render the Act most unpopular with flockmasters—it being mainly devoted to the prevention of scab in sheep, although the clauses referring to influenza or catarrh are also calculated to prove most injurious to those who have sheep affected with this disease. The owners of cattle will also have cause to complain of the operation of the Act in reference to the appearance of pleuro-pneumonia in a herd of cattle. The passing of a bill through the Legislative Assembly is the more unaccountable, as it appears from communications to the agricultural journals of the colony that the stringent measures which have been in force for some time have not tended to diminish either scab in sheep or

pleuro-pneumonia in cattle. The Act which consolidates and amends the existing law relating to the prevention of diseases was passed in the month of May, but is not to come into operation until the 1st January. A new Legislative Assembly is expected to meet for the dispatch of business in October, when it is not improbable that the members representing the pastoral interests in the colony will take steps to ensure the passing of a bill framed more in accordance with the principles of equity, and which, while it will enable inspectors to secure the co-operation of owners of stock. Doubtless much alarm has existed in the Australian colonies as to the general spread in some districts of scab in sheep, and of pleuro-pneumonia in cattle, and that a panic thus engendered has tended to repress any very strong manifestations of opinion against the bill when it was under the consideration of the Legislative Assembly; but the fact that scab had never been so generally prevalent, notwithstanding the stringent means adopted by the Government, points rather to the necessity of throwing the responsibilities connected with the existence of certain diseases and the means of combating these, on the owners of stock, than that the Government should be the active agent to deal with these diseases. It is becoming every day more evident to flockmasters in the colony that further legislation, with an increased number of inspectors, is not to extirpate disease. Where the Government fails, private individual or combined action can effect much to keep the disease from being the scourge it has proved for several years in the colony. It is the interest of owners of stock to make themselves acquainted with the known remedial measures for the extirpation of the scab acari in their flocks, and also of the methods whereby the reappearance of the disease can be prevented. The operation of this principle of self-interest and common law has proved a sufficient security in Great Britain that scab will not spread to the serious detriment of either the owners of stock or of that of the general public. The conditions as to climate in this country and the Australian colonies are not exactly similar; still, with the exercise of the means practised by flockmasters in the various sheep districts of England and Scotland, there should be no serious difficulty of combating scab in sheep in Australia without such stringent measures as those provided for in the bill. By the Act other diseases are to be specially dealt with—influenza in sheep and pleuro-pneumonia in cattle.

Influenza, generally termed catarrh in Australia, proves one of the most fatal complaints which affect animals of the ovine race. The disease appears to depend chiefly upon

atmospheric causes. Sheep depasturing on naturally damp, low-lying runs, where the evaporation is considerable, are the first affected; sheep taken from a warm to a colder district suffer most, while sheep moved from a cold to a warm district have seldom been known to be attacked with catarrh. Next to rot it is the most fatal of all diseases in Australia. Pleuro-pneumonia has caused very considerable loss to stock-masters in various parts of Victoria, New South Wales, and Queensland, and the most stringent measure of slaughtering diseased animals, and those supposed to have been in contact with them, has failed to check the disease to any appreciable extent.

As the question of further Government interference may be under consideration next session of Parliament, we give the outlines of the Act which has been passed in the Victorian Legislature. It has been framed by those who are masters of all the legal verbosity of recent British statutes, and apparently the provisions are calculated to give rise to some questions in law courts as to jurisdiction. The statements which appeared in several organs of public opinion in England as to the prevalence of certain diseases among stock, and the measures necessary to extirpate them, have apparently been taken into account in framing the Act for Victoria. Several of the provisions of two previous Acts have also been adopted. The Act is arranged into four parts, as follows:—"1. Prevention of the disease in sheep called influenza or catarrh; 2. Prevention of the disease in sheep called scab; 3. Prevention of the further spread of the disease in cattle called pleuro-pneumonia; and, 4. General provisions."

The Governor in Council has the power to appoint and to dismiss the inspectors. At the present time there are twelve inspectors, and one chief inspector.

In the bill recently passed there are several provisions in the first part referring to catarrh, and all are stringent. For instance, a fine of not less than £5, nor more than £50, for each infected sheep grazed within a quarter of a mile of any road or upon any land in the actual possession and occupation of the owner of the infected sheep. The same penalties are incurred for driving or conducting, or permitting or suffering to be driven or conducted, any infected sheep. The like penalties are due when the proprietor or person in charge of an infected sheep not affixing a notice in writing in a conspicuous place at the entrance of a road into the land. The same penalties are incurred by "wilfully setting at large and abandoning any infected sheep; for casting the carcase into a water-hole or stream, information on oath made before

a justice by any proprietor or overseer in charge of sheep, or any constable, the justice shall, if it appears to him that there is reasonable cause to suspect or believe the presence of infected sheep, to issue a warrant to authorise some proper person to examine the sheep, and, if necessary, to drive them to the nearest pen, or some convenient place, for examination, and if the sheep appear to be infected they shall be detained." The penalties or forfeitures incurred under the Act are to be recovered under information heard and determined by two justices. One moiety of all fines and forfeitures imposed to be paid to the use of the informer or party prosecuting, "who shall also be entitled to his or her costs and charges, over and above such fines and forfeitures, to be ascertained and assessed by the justices before whom the case is heard." Imprisonment for fined persons in default of payment of penalties and forfeitures. Sheep affected, or those mixed with sheep infected at any time within six weeks previously, are to be infected sheep within the meaning of this part of the Act.

(*To be continued.*)

Translations and Reviews of Continental Veterinary Journals.

By W. Ernes, M.R.C.V.S., London.

ACTION OF THE OIL AND WATERY EXTRACT OF LOLIUM TEMULENTUM (DARNEL GRASS) ON THE HORSE AND OTHER ANIMALS.

By M. C. Baillet, Professor of the Imperial Veterinary School at Toulouse, and M. Filhal, Director of the Medical School at Toulouse.

Second Part.

On the 21st of November, 1862, at a quarter to eleven o'clock, the oil extracted by ether from three kilogrammes of the *Lolium temulentum*, was administered to an old mare. She was broken-winded, but still vigorous. As we shall see further on, this animal had taken, on the 15th of November, the whole of the watery extract of three kilogrammes of the *Lolium temulentum*, without much inconvenience. But a different result followed the experiment of the 21st. The animal remained quiet without showing anything particular until half-past eleven o'clock, when there was suddenly a copious emission of urine, and an expulsion of soft fæces. A

general and marked tremor set in almost directly after these evacuations, which soon became very intense. The mare now became unsteady on her legs, which she kept wide apart, and at times she shifted her feet rapidly, swayed backwards and forwards, then hung back to the full extent of the halter reins, and seemed as if she would fall every moment. The neck was extended; the countenance very anxious; she appeared terrified on being approached; backed, dragging her feet, having, as it seemed, lost all power of raising them, and the tremors were very violent. The respiration was laborious and jerked, the nostrils distended, the beating of the heart tumultuous and hurried. In half an hour after, during which time the symptoms were much aggravated, the mare suddenly lost her balance, fell down, got up, and then fell again, without being able to get up this time. She was lying on the left side, and the tremors were now changed into convulsions; the muscles of the face and the lips were firmly contracted; the eyes were twisted in their sockets, and turned upwards, so that only the white thereof was visible; the neck was continually and violently bent and extended; the legs were also at times violently extended, and as suddenly flexed, and were affected by a constant convulsive tremor. At times she made useless efforts to get up; she opened and closed her mouth, violently grinding the teeth; then again half opening the mouth let the tongue hang out. During the whole of this time there was the grunting at every expiration, which was quick and deep; the pulse, which was difficult to ascertain on account of the convulsive movements, was, however, small and quick. At half-past twelve attempts were made to get her up, but in spite of every effort this could not be effected, for, although four men raised her body, her legs remained bent, and it was impossible to get her feet to bear on the ground. It was therefore decided to let her lie, but she was turned over on the right side. She lay for about ten minutes in this position, when the following symptoms were noticed:—She was now quiet and calm compared with the former state of violence; nevertheless, there was a general tremor, and from time to time convulsive contractions were perceived in the muscles of the neck and the legs, likewise in those of the face and the lips; at times grinding of the teeth was heard; the ears and the legs were cold; the nostrils dilated; the respiration 19 in the minute, and sonorous (it was 10 before the experiment); the beating of the heart was strong and 49 in the minute. At half-past one the symptoms became more violent, the animal yawned frequently, the nostrils were distended beyond description,

the head and neck were stretched out, the tail was erected; then again the neck was flexed so as to bring the head against the chest, and loud grinding of the teeth was heard, the eyes were turned violently within their orbits and almost hid under the upper lids; the tremors redoubled in intensity, the legs continually agitated with a rapid movement of flexion and extension, viscid saliva escaped from the mouth, the respiration became sibilant, and as many as 25 inspirations were counted in the minute; the conjunctiva, which was easily seen by the rapid motion of the eyes, was of a purple colour, and the beatings of the heart were so loud that they could be distinctly heard at a distance. This frightful crisis lasted about three minutes, when gradually the symptoms abated, and the animal was in the same state as before; nevertheless, the circulation and the respiration remained accelerated, and the heart still beat 55 in the minute. From half-past one until half-past three, five similar accessions as the above-described set in, each lasting from three to five minutes. The only modification was that in one of them the beating of the heart rose to 150 in the minute. After half-past three there was no return of these attacks. The animal seemed to be exhausted, it still, however, trembled violently, and was affected from time to time with convulsive movements in the legs and the neck, but which had neither the energy nor rapidity of the preceding ones. At half-past eight the animal was nearly in the same state, except that the legs were colder than they had ever been before, and the hair of the mane could be pulled out easily. On the 22nd, at half-past six in the morning, she was found dead. The autopsy was made at half-past one in the afternoon of the same day. The brain was found to be the seat of congestion, characterised by an excessive distension of the blood-vessels which ramify over its surface. This congestion was more marked on the right than on the left side. On slicing the cerebellum and the medulla oblongata, both the white and gray substances were of a sandy appearance, caused by numerous small red spots. The plexuses of the brain and the cerebellum were of a red colour. The blood-vessels which ramify over the surface of the spinal cord were likewise distended with blood, which was less marked towards the posterior part. The white substance was firm and healthy, but the gray substance was softened, and of a livid purple colour. The mucous membrane of the stomach on the left side was covered with purple specks, underneath which the dermis was highly injected. Some larvæ of the œstri were found in the stomach, detached and dead.

The mucous membrane on the right side of this organ was the seat of a violent congestion, which was more marked towards the fundus at a short distance from the pylorus. The small intestines showed evident traces of congestion for about the length of a mètre, the remainder there was nothing abnormal in, excepting three dark-red spots about the middle of their length. There was distension of the blood-vessels at the apex of the cæcum and opposite to the gastric curve of the colon; the mesenteric vessels were all distended with blood. The liver was gorged with black coagulated blood. The spleen was in its normal state. There was no alteration in the urinary organs. The right cavities of the heart were filled with black fluid blood, containing small clots; the valves and serous membrane of the auricles were likewise coloured dark by the blood. A coagulum of a whitish-yellow colour and considerable size was found in the left ventricle; at the base, and on the outside of the ventricle, there was a serous effusion which raised the outer coat of this organ. The blood-globules examined by the microscope showed no alteration in form. The right lobe of the lungs corresponding to the side on which the animal died, was gorged with black blood, fluid with the exception of a few small clots, found principally in the pulmonary artery. The left lobe was healthy.

The experiment, of which we have given the above account, is interesting in more than one respect; for, independently of having afforded us the opportunity of tracing the complete picture of the sufferings which horses undergo when subjected to the action of the oil of the *Lolium temulentum,* and the lesions which this substance produces on the organs, it also enables us to notice the difference in which these two active principles affect the horse and the dog. In fact, as we have already said, and repeat it further on, the mare, the subject of this observation, had taken on the 15th of November, that is six days before, the whole of the aqueous extract obtained from three kilogrammes of the seeds of the lolium, and this product which had such a fearful effect on the dog was almost inert on her. The oil, on the contrary, killed the animal in a few hours, while it is very likely that the oil, in a dose proportioned to the size of the animal, would not have had the same result in the dog.

This is one of the most curious facts to record in the history of the toxic properties of the lolium. It is not, however, the only one of this nature that we shall have to verify, since on pursuing our experiment afterwards on the herbivora, we met with others quite as remarkable. The oil of the *lolium*

temulentum is a poison to the horse, but only when given in large doses. When taken in small quantities it does not kill the animal, but it does not on that account remain altogether inactive. We have had the proof of this in other experiments. The following will furnish us with another: an old horse (about twenty years) in good condition, was selected for this experiment. Having been dieted for the purpose on the 21st of December, 1861, on the 22nd, at eleven o'clock a.m., he was given the green oil of the extract of one kilogramme of the *Lolium temulentum*, extracted by ether from the alcoholic extract of the same. The animal remained at first for some time perfectly quiet, but about a quarter past one he was seen to be seized with a general tremor, which at first but slight, but became speedily intense, very violent at the elbows and the stifles, the animal was restless, agitated, pawed the ground, dilated its nostrils, smelt repeatedly, as if by that sense it acquired some new sensation; the head had a continual jerking motion, which rendered the exploration of the pulse very difficult; the pupils were contracted, and the respiration, as well as the circulation, accelerated. At two o'clock the tremors, which up to that time had been uninterrupted, were accompanied by convulsions, which were well defined in the muscles of the limbs, neck, and head; these convulsions were intermitting, and took place successively, sometimes in one part, then in another; the contraction of the pupils persisted. At half-past three the animal became a little more calm; the tremors disappeared, the pupils were no longer contracted, the respiration and circulation were more regular even than before the experiment. Trotting the horse for about six minutes brought on the tremblings again, but they were not so violent as before; they continued, nevertheless, until four o'clock; the animal fell then in a soporous state, which lasted until five o'clock, when he began to eat a little hay. The next morning, at seven o'clock, there were no traces left of those symptoms which had been so manifest the evening before.

It is a wonder, from the experiment which we have described, that a horse could have taken the whole of the *green oil extracted from one kilogramme of the Lolium temulentum* without producing great disturbance of its vital functions. This, however, was the case in a horse ten years old, on which we experimented on the 7th of January, 1861.

(*To be continued.*)

ROYAL COLLEGE OF VETERINARY SURGEONS.

QUARTERLY MEETING OF COUNCIL, April 5th, 1865.

Present:—The President, Professors Spooner and Varnell, Messrs. Broad, Ernes, Greaves, Harpley, Harrison, Helmore, Lawson, Robinson, Thacker, Wilkinson, and the Secretary.

The President in the Chair.

The minutes of the preceding meeting were read and confirmed.

Letters were read which had been received from several gentlemen holding the Highland and Agricultural Society's Certificate who were desirous of becoming candidates for the Diploma of the Royal College of Veterinary Surgeons at the next meeting of the Court of Examiners.

A letter was also read from Professor Syme, acknowledging his election to the Scotch section of the Board of Examiners, and one from Dr. Struthers, on his re-election as Secretary to the Board.

The subject of the forthcoming examinations was then considered, when it was moved by *Mr. Ernes*, and seconded by *Mr. Helmore*—

"That the London examinations take place on April 24th, and be continued on the 25th, 26th, and 27th."—Carried.

It was moved by *Mr. Wilkinson*, and seconded by *Mr. Ernes*—

"That the Scotch examinations take place on April 24th and following days."—Carried.

The Registrar reported the following deaths, viz.:—Mr. Henry Hogreve, *half-pay* 15th Dragoons; diploma dated July 1st, 1806. Mr. William Woodman, *half-pay*; diploma dated June 30th, 1812. Mr. Sargeant T. Harman, Arundel, Sussex; diploma dated April 30th, 1847. Mr. Thomas Pengree Page, E.I.C. 19th Hussars; diploma dated June 28th, 1836. Mr. John Robinson, Lichfield, Stafford; diploma dated April 27th, 1815. Mr. William D. Lines, St. John's Wood; diploma dated May 11th, 1853. Mr. James Buckeridge, Hungerford, Berks; diploma dated April 28th, 1863. and Mr. Charles C. Brett, *half-pay*; diploma dated April 1st, 1828.

The Finance Committee reported that they had examined the vouchers and receipts of payment during the preceding quarter, which were found to be correct. They also sub-

mitted the quarterly balance-sheet of the Treasurer's account, from which it appeared that the liabilities for the quarter ending April 1st amounted to £69 6*s.* 11*d.* They recommended that these liabilities should be discharged.

It was moved by *Mr. Broad,* and seconded by *Mr. Helmore*—

"That the Report be adopted."—Carried.

Cheques were ordered to be drawn for the current expenses.

The arrangements for the forthcoming Annual Meeting were next considered, when—

It was moved by *Mr. Lawson,* and seconded by *Mr. Robinson*—

"That Messrs. Wilkinson, Ernes, Harpley, and the Secretary, be appointed the Committee to prepare the Annual Report."—Carried.

It was moved by *Mr. Lawson,* and seconded by *Mr. Greaves*—

"That Mr. James Hall and Mr. Joseph Woodger, be appointed Auditors."—Carried.

A discussion next took place relative to the Anniversary Dinner, when it was resolved—

"That the London Tavern be selected, and that the Council be the Stewards."

It was moved by *Mr. Wilkinson,* and seconded by *Mr. Greaves*—

"That Messrs. Silvester, Ernes, Harpley, and Thacker, constitute the Dinner Committee."—Carried.

The Secretary called the attention of the Council to the propriety of having additional advertisements inserted, viz., in the *Sporting Gazette* and *Glasgow Herald,* which was agreed to.

By order of the Council,
W. H. Coates, *Secretary.*

SPECIAL MEETING OF THE COUNCIL, held April 19th, 1865.

Present: The President, Professor Varnell, Messrs. Brown, Ernes, Harpley, Harrison, Helmore, Moon, Thacker, Wilkinson, Withers, and the Secretary.

The President in the Chair.

The minutes of the preceding meeting were read and confirmed.

A letter was read which had been received from Dr. Struthers relative to an application for examination made by Mr. Robert Park, a veterinary student of the Glasgow school, who submitted an attested list of medical certificates which he had received from the University of Glasgow, during a period of three years' attendance, as well as a certificate from Professor M'Call, of the Glasgow Veterinary College, for the Session 1864-5.

It was moved by *Mr. Wilkinson*, and seconded by *Mr. Harpley*—

"That Mr. Park be considered eligible for examination, and that a telegram be sent to Dr. Struthers to that effect."—Carried.

A letter was also read from Mr. Cowie, one of the members of the Court of Examiners acting for Scotland, relative to the meetings of the Board in Edinburgh being held twice in one day on an emergency, and requesting to be informed whether in such a case the Examiners would be entitled to double fees.

The subject was discussed at some length, and ultimately ordered to be adjourned for future consideration. The Secretary was requested in the mean time to communicate with Mr. Cowie, and also to ascertain from the Medical Examiners resident in Edinburgh whether it would be agreeable to them to attend two meetings in one day.

The Annual Abstract of the Proceedings of the Council, as prepared by the Report Committee, was then read and submitted for approval; whereupon—

It was moved by *Mr. Harrison*, and seconded by *Mr. Ernes*—

"That the Report be received and adopted."

The Amended Balance Sheet of the receipts and expenditure during the past year, as audited, was laid on the table. After considerable discussion—

It was moved by *Mr. Thacker*, and seconded by *Professor Varnell*—

"That it be received and adopted."—Carried.

A cheque was ordered to be drawn for the amount of £126, the Examiners' fees.

By order of the Council,

W. H. Coates, *Secretary*.

NEW MEMBERS OF THE PROFESSION.

At the several meetings of the Court of Examiners of the Royal College of Veterinary Surgeons the following gentlemen passed their examinations, and were admitted members of the body corporate.

STUDENTS OF THE ROYAL VETERINARY COLLEGE, LONDON.

April 24th.

Mr. Jas. Rumsey Williams .	Caernarvon, North Wales.
— Charles William Clancy	Brownstown Lodge, Kildare.
— Robert Wilson . . .	Wigton, Cumberland.
— George Colley Bland .	Boston, Lincolnshire.
— Wm. Reynolds Jermyn	Wymondham, Norfolk.
— George James Gould .	Southampton.
— Julius Stauffer . . .	Clapham, Surrey.
— Haydon Leggett . . .	Southall, Middlesex.
— Wm. Farmer Cooper .	Great Berkhampstead, Herts.
— Edward Cooper Smith .	Leamington, Warwick.

April 25th.

— Henry Hobbs . . .	Newnham, Gloucestershire.
— Wm. George Flanagan	Reading, Berks.
— Charles Morgan . . .	Wingham, Kent.
— Dive Millener . . .	Sheerness.
— Alfred Adrian Jones .	Ludlow, Salop.
— Edward Price . . .	Birmingham.
— T. Fowler Hutchinson .	Great Eccleston, Garstang, Lincolnshire.
— William Nicholson . .	Liverpool.
— Wm. Northrop Procter	Bradford, Yorkshire.
— James Pulling Heath .	Totness, Devon.
— Charles Houlden . .	South Somercote, Louth.
— William Chambers . .	Fakenham, Norfolk.

April 26th.

— William Wyer . . .	Folkingham, Lincolnshire.
— John Young	North End, Felsted, Essex.
— Robert Ware	Seavington, Ilminster, Somerset.
— Edward Samuel Hewens	Hayes, Middlesex.
— Henry Newson . . .	Lounds, Lowestoft, Suffolk.
— Charles Barrow . . .	Newmarket, Cambridgeshire.

April 27th.

Mr. Thomas Jas. Poulton .	Coggeshall, Essex.
— Joseph Coates . . .	Guildford.
— Richard Horner . . .	Keighley, Yorkshire.
— James Trevill Little .	Liverpool.
— James Charles Bacon .	Upper Clapton, Middlesex.

In addition to this list of new members of the profession, we add the following names of gentlemen who have received the certificate of the Highland and Agricultural Society of Scotland.

Mr. George Young . . .	Haddington.
— James Mitchell . . .	Kelso.
— Thomas Sharp . . .	Hamilton.
— John Mitchell . . .	Aberdeen.
— David Young. . . .	Hamilton.
— James G. Paton . . .	Manchester.
— Thomas Kelburn . .	Skelton, Yorkshire.
— Andrew Mann . . .	Lambton, Durham.
— R. W. Sloane. . . .	
— Edward Perry . . .	Leicestershire.
— Thomas Park	Edinburgh.
— Robert Moore . . .	London.
— W. A. Smith	Dublin.
— William Dent . . .	Westmoreland.
— W. G. Barker . . .	Skelton, Yorkshire.
— A. Butters	Edinburgh.
— John Hammond . . .	Newton-Stewart.
— Thomas M'Crorie . .	Monkton, Ayrshire.
— Alexander Lockhart .	Glasgow.
— James Keith	Old Deer.
— Frederick Wall . . .	Manchester.

Veterinary Jurisprudence.

COURT OF COMMON PLEAS.—March 22.

(*Before* Judge Brady.)

JOHN KELLY *v.* ELBERT NOSTRAND AND CHARLES BURDEN.

This was an action to recover damages for injuring a couple of valuable horses belonging to Sheriff Kelly. The case lasted several days, and created unusual excitement among horse doctors, jockeys and turfmen, generally. The defendants are veterinary surgeons, and had charge of the plaintiff's horses when the accidents occurred. Horse No. 1 had his back broken during the operation of firing, and was permanently disabled. Horse No. 2 fell through a wooden grating in front of the stable and was cut very badly, so that the owner lost the use of him for an entire season.

Mr. Vanderpool, who conducted the case for the plaintiff, contended that instead of being hobbled and "cast" to the ground in order that the operation might be performed, the horse should have been fired in stocks, which was a more modern and less barbarous mode of treatment, and attributed great negligence to the plaintiffs on that account. As to horse No. 2, it could not be denied that there was negligence in allowing the grating to remain in such an insecure state. The animal was Mr. Kelly's favorite roadster; and as he was deprived of his services for an entire season, the jury were called upon to remunerate him for the loss at the rate of five dollars per diem.

The defence, which was conducted by Edwin James, was quite elaborate, considering the small amount involved, and was very interesting to horsemen. A number of witnesses were examined to show that "casting," or throwing the horse upon the ground, as was done in this case, was the common and favorite mode of proceeding preparatory to "firing." A witness, who was present when the operation was performed, said the "casting" was done well, and gave it as his opinion that the injury to the animal was done during the subsequent struggles and plunges which it made while the operation of firing was being performed; and the counsel cited some well known French authorities to sustain the theory. He did not attempt any lengthy defence in the case of horse No. 2, but in the case of No. 1 he was very tenacious of his client's innocence, and characterised the prosecution as cruel and unjust.

The jury, after deliberating about an hour, rendered a verdict for the plaintiff, assessing the damages at 600 dollars, which was about one third of the amount claimed.—*New York Herald.*

CORNWALL LENT ASSIZES.

(*Before* Mr. Baron Channell.)

POISONOUS EFFECTS OF ARSENICAL VAPOURS ON ANIMALS.

Matthews *v.* King.

Mr. Coleridge, Q.C., and Mr. Cole, for the plaintiff; solicitors, Messrs. Paul, Linton, and Holloway. Mr. Karslake, Q.C., and Mr. Kingdon, for the defendant; solicitors, Messrs. Pinniger and Wilkinson.

Mr. Cole, in opening the pleadings, stated that the plaintiff, Philip Matthews, brought the suit against Edward King, the defendant, to recover damages by reason of defendant having allowed certain noxious vapours to escape from a stack and deposit themselves on the lands of the plaintiff, so as to render the soil and herbage poisonous, and poison cattle belonging to plaintiff. The defendant first pleaded "Not guilty;" that the lands were not the plaintiff's; and that the smelting-works that would be referred to were not carried on by defendant as alleged.

Mr. Coleridge, Q.C., said that the plaintiff was a farmer, living at a place called Summerhouse, at Chacewater, near Truro, and defendant carried on business at Austin Friars, London. He was a large shareholder in the Great Wheal Busy Mine, near Chacewater, and was purser there. The mine was a tin and copper mine, conducted on what was known as the cost-book principle. On the 14th of September, 1859, the plaintiff bought some property near the mine, and, at that time, there was no manufacture of arsenic carried on at the mine. Subsequently, however, the adventurers in the mine took up the manufacture of arsenic; they increased and altered the flue and the chimney-stack, through which the vapour of the arsenic was carried off. The vapour deposited itself along a horizontal tube. The stack was one hundred fathoms distant from the plaintiff's fields at first; but after the alterations a new stack was made, that was brought within fifty or sixty fathoms of plaintiff's fields. This was about 1861, and in the following year Matthews sowed one of his fields with oats; and in 1863 hay, straw, and oats, that were grown by him in the fields near the mine, were given to a horse, which immediately fell ill, and showed the specific effects that would have been produced by its having eaten arsenic. The horse was prevented from eating more of the same food, and the animal recovered. In 1864 the same thing substantially occurred. The same or another horse was fed on the produce of the fields, and it ate so much that it died. The horse was skinned, and the stomach was sent to Mr. Rowe, who would state that he took nearly ten grains of arsenic from the stomach and spleen, six and a quarter grains from

another part of the entrails, and one sixth of a grain from the washings of the jar in which it had been placed, making, in all, nearly sixteen grains of arsenic. Plaintiff lost two heifers and a colt in this way, and had been subjected to considerable damage. Before the arsenic works were established the fields gave good pasturage, cattle fed without harm; but after the new flue and stack were put up the cattle were affected by the fodder that was poisoned by the vapour escaping from the flue, and died. The plaintiff, therefore, after showing adequate cause, and that an effect that might follow had followed, asked the jury to infer that his crops had been influenced by the vapour, and that his cattle had died from a cause for which defendant was responsible. Professor Taylor would prove that the tests of Mr. Rowe were the proper tests, and that what was found by him was arsenic in a sufficient quantity to occasion death. It would be shown, too, that the flue was imperfectly constructed, that there were certain apertures out of which the arsenical vapours were emitted, as well as at the top of the stack. This was shortly the case. If there were arsenic coming over the plaintiff's farm, and it could only come from defendant's flue, then defendant could not expect that plaintiff would continue to have his pasturage and produce injured and his cattle destroyed without receiving redress.

The plaintiff was then called, and substantiated the above.

Cross-examined.—Defendant went to look at the crops when plaintiff complained of the effects of the arsenic. The chimney-head was as white as a miller's hat with arsenic, and the smoke from it could be tasted. There were mangolds growing; the leaves were brown and crisp, and they crumbled away in the hand. Plaintiff took some away. The fields were not his own; he rented them of Lord Falmouth. He had fields of his own. The horse in which the poison was found strayed away from the "Long-field" the night before its death. The horse did not fall into a costeening pit. It was found lying within a fall of the ground a foot deep. It was lying on its back.

Re-examined.—The barley on which the horse (a mare) fed before she died was growing in the "Long-field."

James Ashton Jones, a veterinary practitioner, Truro, said he was called to see the mare after she had first become poisoned. She was suffering from severe dryness of the skin, and had lost her coat. He gave medicine to the mare, and she at that time recovered.

Mr. Samson Taylor Rowe, of Redruth, then gave a lengthy, skilful, and clear statement in detail of the several tests used by him in examining the stomach and œsophagus of the mare, and stated that the result was the discovering of sixteen grains of arsenic. On visiting the works he found, in the year 1863, that the herbage was charred with arsenic dust, and he smelt and tasted arsenical vapour. He saw large piles of manufactured arsenic uncovered and unprotected, and which winds could blow across the country.

Dr. Alfred Swaine Taylor was then sworn, and said that he had heard Mr. Rowe's evidence. Mr. Rowe had pursued a slightly different plan from his own—most chemists differed in the mode of

testing—but from what he had stated he (Dr. Taylor) had no doubt whatever that Mr. Rowe discovered arsenic. He employed the only three tests upon which chemists could rely. The presence of arsenic showed that arsenic had been deposited with the blood, and circulated. Whatever arsenic was found in the stomach was the surplus of the arsenic which had actually caused death. The arsenic found in the stomach was, therefore, not the arsenic which had destroyed life, except by producing inflammation; the arsenic which operated to kill was that which had gone into the blood. He had no doubt that the horse died from the effects of arsenic. The quantity of arsenic found was much larger than could have been properly administered as a tonic. Witness was Chemical Examiner to the College of Veterinary Surgeons. First-class veterinary surgeons did not give arsenic, but when arsenic was given to horses five grains were a dose. A horse might take more, but this would be a safe dose; more would jeopardise the life of the animal. Did not know that arsenic had the effect of denuding the bodies of horses of their hair. It had this effect on human beings. Arsenic gave a withered, dried, brown appearance to vegetation along the current in which arsenical particles were carried by the wind.

Cross-examined.—The arsenical vapour is much denser than air, but the particles coming from the chimney in a very finely divided state, and being an impalpable powder, the heated current of air from the chimney would carry it off over fields to some distance.

This was the case for the plaintiff.

(*To be continued.*)

CLERKENWELL.

April 12th, 1865.

Disputed Case of Alleged Glanders in a Cab Horse.

Isaac Beech, a cab driver, in the employ of William Blackmore, a cab proprietor, of Mansion House-street, Kennington-road, was charged with working a horse in an unfit state, and alleged to be glandered; and William Blackmore, the owner, was charged with aiding and abetting the said offence.

Mr. Love attended on behalf of the Royal Society for the Prevention of Cruelty to Animals to watch the case.

The evidence of *Thomas Shivey*, hackney-carriage attendant, went to show that on the afternoon of the 27th ult. the defendant Beech drove upon the rank in King's-road, Gray's-inn-lane, a horse in cab 3566. He (the attendant) had his attention drawn to the

state of the horse's nostrils, and on examining the animal he found a "jug" under the left jaw, and other indications of the horse being glandered. He, therefore, refused to water the horse, and afterwards reported the case.

Mr. Cherry, police veterinary surgeon, said he was called to examine the horse in question, and found enlarged glands on the near side of the jaw, a thin watery discharge from the nostrils, and small ulcers, indicating the presence of glanders. The horse was also poor and weak, had a cough, and was altogether in a condition unfit for use. He (Mr. Cherry) had no hesitation in pronouncing the horse glandered. The horse was evidently ill, and Blackmore admitted that it had a bad cold, but said he did not consider it was glandered. He had examined the horse again that morning, and found that the small ulcers had disappeared, but he found a large one higher up the nostril. There was also old-standing disease of the lungs.

The defendant *Beech*, in answer to the charge, said he had taken the horse to the Veterinary College, and Professor Spooner had declared that there was no appearance of glanders.

The defendant *Blackmore* said he had consulted his own veterinary surgeon about the horse, and he, together with Professor Spooner, had given a decided opinion that the horse was not glandered.

In answer to the Magistrate, *Mr. Cherry* said he had no doubt whatever about the case ; but, leaving the glanders out of the question altogether, the animal was otherwise in an unfit state to be worked.

It having been shown that the defendant Blackmore had received numerous cautions at this and other police-courts as to the state of his horses,

Mr. Barker said it was clear to his mind upon the evidence before him that the horse, if not glandered, was totally unfit to be worked, and as the defendant Blackmore did not retort the charge by counter evidence, he must pay a fine of 40*s*. and the costs, or, in default, go to prison for fourteen days. The defendant Beech would be discharged.

The fine was paid.

OBITUARY.

We have to record the death of Mr. Richard Vines, at his residence, Great College Street, Camden Town, on April 6th, aged 71. He obtained his diploma Feb. 7th, 1824.

Also of Mr. Charles Curtis Brett, L. H. Cavalry Depôt. His diploma bears date April 1st, 1828.

Likewise of Mr. T. W. Moss, London, who obtained his diploma March 20th, 1844.

And of Mr. James Buckeridge, Hungerford, whose diploma bears date May 11th, 1854.

The passing away of so many from among us may well awaken serious thought, and cause regret. This life, we know, is only a transitory state of existence, and time but the vestibule to eternity, yet human nature recoils at the approach of death. Besides, we always feel death to be the more solemn when it enters our own immediate circle, and removes those with whom we have been associated. With some decay would seem to be gradual, "they die in a good old age;" with others, the buds of spring appear to be nipped by an untimely frost; and then there are those who are removed just when they have arrived at maturity, and much good was to be expected from their labours.

Many of the members of our profession will remember Mr. Vines from his early official connection with the Royal Veterinary College. In him there was much originality of thought, accompanied with considerable perseverance. Possibly he was in the habit of expressing himself a little too independently to please some persons. It is well to blend the "*suaviter in modo*" with "*fortiter in re.*" But who is without fault among us?

> "O man! judge not thy brother; though there come
> Dark rumour wafted on each wind that blows;
> Though to defend, his very friends are dumb,
> Add not thy weight of influence to his foes."

To object, censure, and condemn, are easy things, but it is rarely right to practise these things, and never wise to do so without investigation. Ofttimes a rich kernel is encased in a rough exterior. We all might act otherwise, and more consistently too, perhaps, could we foresee events; yet we believe that "blindness to the future is kindly given." He only is the honest man, and deserving of commendation, who aims to fulfil the duties of the station in which Providence has placed him.

We have no hesitation in expressing our conviction that the profession has benefited by the labours of Mr. Vines. His work on glanders contains much useful matter, and his investigations of the cause of "buffy blood," to which he gave publicity in the medical journals of the day, show much originality of thought and design. Of late his health had been visibly declining, and within the last few weeks of his death he was compelled to keep to his room. Dropsy set in, and he died on the 6th of April, at the advanced age of 71.

THE

VETERINARIAN.

VOL. XXXVIII. No. 450. JUNE, 1865. Fourth Series. No. 126.

Communications and Cases.

IMPACTION OF A CALCULUS IN THE URETHRA OF AN OX, LEADING TO A RUPTURE OF THE BLADDER.

Communicated by Professor VARNELL.

THE particulars of the following case were sent me by Mr. Vincent Vine, M.R.C.V.S., Lewes, with a request that, as President of the Veterinary Medical Association, I would lay the case before the members. Mr. Vine wrote as follows:

"DEAR SIR,—I have forwarded to you, per rail, the diseased bladder and penis of an eight-year-old Devon ox. I also send you a brief account of the case, which will, I trust, be interesting to the members of the Veterinary Medical Association, should you think proper to lay it before them. Although there is nothing very remarkable in the case, still I thought there might be some pupils present who had never seen a similar one; and to such it will be practically useful. The ox in question was first noticed to be ill on New Year's Day by the bailiff, who observed that he was almost continuously lying down and getting up again, frequently stepping backwards and shifting his hind feet; and had it not been that he voided his fæces regularly and in full quantities, it might have been thought that his bowels were strangulated. Some purgative medicine was given, which operated on the following day, when it was thought the ox was somewhat better. It was noticed, however, that he evinced much pain in passing his urine. He was allowed to

remain in this state for a week, when I was requested to see him.

"On my arrival I found the animal in great pain, which, with the other symptoms that have been described, induced me to examine the urethral canal. In doing this I very soon discovered that the passage was obstructed by a small calculus, firmly fixed at about six inches from the glans penis. I then passed my hand up the rectum and examined the bladder, which I found to be quite empty. The pressure produced by this examination caused considerable pain. I gave it as my opinion that the bladder was ruptured, and that there was no hope whatever of saving the life of the animal. As he would still eat a little hay, the bailiff imagined him to be better, and requested that I would see him again, which I did on the following day, when I repeated my conviction that there was not the slightest chance of his recovery. It was now determined that he should be slaughtered, and as such he was sent to Lewes, a distance of about eight miles, which I was told he performed pretty well.

"I shall give no description of the lesions which were found on making the autopsy, but conclude this account by observing that, as I believed the bladder to be ruptured when I first saw the animal, I did not deem it right to resort to any treatment. Supposing, however, this had not been the case, I should have either cut down upon the calculus and extracted it, or have amputated the penis above the obstruction. The latter I have done on several occasions, and with a satisfactory result."

Remarks.—In commenting on this case at the meeting of the association, I observed that I should first draw attention to the condition of the bladder. The organ was contracted to a moderate size, and its coats were very much thickened from effusion. In some places this arose from a rupture of small blood-vessels, leading to extravasation of the blood, and giving to the bladder a dark mottled appearance. So far, however, as I could detect, the coats were not ruptured. The inner surface of the mucous membrane was of a dark-red colour, approaching in some places to a black hue. It was covered by a muco-sanguineous fluid, a few shreds of coagulated lymph, and partially coagulated blood. Entangled in this semifluid material there were several crystal-like *calculi*, about the size of a common pea, and having their surfaces covered with asperities of an angular form. Passing from the bladder to the urethral canal, I observed that the latter was unnaturally thin, and that the

muscular coat was pale, and of a dirty aspect. At about an inch and a half from the neck of the bladder the wall of the canal was found to be ruptured to the extent of about an inch. It was through this opening that the urine had escaped prior to the examination made by Mr. Vine, which, it will be remembered, was three days previous to the slaughtering of the animal.

The fact that the beast was able to travel eight miles, without apparently much inconvenience, is a circumstance well worth the consideration of the members of the profession, and as a point in veterinary medical jurisprudence is most valuable. On following the course of the urethral canal to about six inches of the external meatus, I detected the calculus alluded to by Mr. Vine. It was so firmly impacted in the canal that no proper amount of force could have removed it during life; and the only thing which could have been done was to have extracted it by cutting into the urethral canal.

I proceed to make a few remarks with reference to the symptoms which were observed during the progress of the case, and also on the course which the bailiff adopted before seeking veterinary aid. We glean from a perusal of Mr. Vine's letter that the symptoms, although resembling some of the forms of bowel disease, were, nevertheless, from being associated with retention of urine, especially diagnostic of an affection of the urinary organs. Indeed, it may be said that the symptoms were suggestive of a calculus being impacted in the urethra. Had Mr. Vine been sent for in the first instance, I have little doubt that he would have diagnosed the case correctly, and possibly might have saved the life of the animal. The adoption of this course would have been far more consistent on the part of the bailiff than that of his treating the beast a whole week without, in reality, knowing what was the matter with it. Things of this kind are much to be regretted, and I cannot refrain from saying that it would be far more to the interest of the owners of stock if they would make it a rule to call in some educated veterinary surgeon to treat their animals, instead of allowing persons to interfere with them who know, in truth, nothing about disease.

To return. The symptoms in cases of this kind are mostly so well defined that the practitioner has little or no hesitation in asserting that they depend upon a *calculus* or *calculi* being impacted within the urethral canal. Although this is so, still he cannot at all times afford relief by an operation, owing to the position which is occupied by the obstructing body. Mr. Vine suggests two modes of operating, one of which

would require the penis to be drawn out of the prepuce, which can only be effected with great difficulty, and then only to a certain extent. Either of the modes of operating, which are named by Mr. Vine, would, if performed early enough, allow the urine to pass, and thus afford relief. There are, however, circumstances which call for due consideration, as to which plan should be resorted to, or whether some other may not be preferable. For instance, let us suppose the patient to be a valuable bull, and that it is desirable to preserve him on account of his stock. Or, on the other hand, that the subject of the affection is a lean ox, required only for fattening purposes. In the case of the bull we certainly should not amputate the penis, but, on the contrary, endeavour to remove the calculus, with as little disturbance to the walls of the urethral canal as possible, so as to lessen the probability of a *stricture* being formed, a result very likely to occur. Cutting down on the obstruction is the mode of procedure to be preferred in the bull, when practical; and if it should be found that a stricture does form and obstructs the passage of the canal, then amputation would follow, the animal being afterwards fatted.

Such are my views with reference to an affection of this nature in the bull.

In a similar case in the ox I am of an opinion that amputation, if practical, would be preferable, in the majority of cases, to cutting down upon the stone, and that there would be far less risk of an impediment to the passage of the urine being thereby produced. This view is confirmed by Mr. Vine, when he says that he has amputated the penis of the ox on more than one occasion, and generally with success.

POISONING OF CATTLE BY THE WASTE OF SOME *GREEN* FLOCK-PAPER.

Communicated by H. Lepper, M.R.C.V.S, Aylesbury.

Early in the morning of the 22nd of April, 1865, I was requested to attend a number of young cattle—fourteen—the property of Mr. W. Worster, of Wendover, about five miles from my residence. The messenger stated that one animal was lying dead in the farm-yard, and that several others appeared to be very ill. On my arrival I found this statement

to be correct, and that there were no less than seven which presented symptoms of serious illness. There was a total loathing of food in all; a cessation of rumination; drooping of the head; weak and almost imperceptible pulse; disinclination to move; profuse diarrhœa, the fæces being of a light-chocolate colour, probably owing in part to the food the animals had been kept on, viz., straw and oil-cake; great thirst; a staring coat, and quickened breathing.

From the suddenness of the attack—I was informed that on the previous evening they appeared all right—the quick termination of the disease in the death of one animal, and the peculiarity of the symptoms in all, I came to the conclusion that their illness was caused by some poisonous agent that had recently been partaken of. On stating this opinion to the proprietor he told me that a quantity of paper, which had been pulled off the walls of a room, had been thrown into the farm-yard, and that the cattle were seen to be eating it on the previous afternoon. The attention of the herdsman, he said, was called to the circumstance, but he took no further notice than merely remarking that it would do them no harm. I proceeded at once to examine some of the paper still remaining in the yard, and found it to be what is termed "a flock," and of a green colour. According to Dr. Guy (see report to the medical officer of the Privy Council*), emerald green, or Scheele's green, the colouring material of paper of this kind, contains a large amount of arsenious acid, so that it was at once apparent that the animals, by having partaken of this waste paper, had thereby obtained a quantity of this deadly poison.

The treatment had recourse to consisted, in the first place, of placing within the reach of the animals a quantity of lime water. Some of them drank readily of this at once, and those which did not were dosed with it to the extent of about two quarts each. They were also allowed to drink freely from a pond in an adjoining paddock. To each animal a brisk purge was likewise given, which was followed up, a few hours afterwards, by a dose of chalk and opium. The latter was also repeated at intervals of every twelve hours.

On the following day a slight improvement was observable in three or four of them. They had taken a little food, and the diarrhœa was diminishing.

24th.—A marked change for the better in all of them.

* *Extract.*—"The ultimate chemical composition of emerald green, as determined by Dr. Corey, is—arsenious acid, six parts; oxide of copper, two parts; acetic acid, one part; two thirds of the pigment, therefore, consists of arsenious acid."

25th.—Still improving. Appetite much better. Most of them, also, have been seen to ruminate.

The diarrhœa continued rather obstinate in two of the animals, but it finally yielded to the treatment adopted, and on my visiting them the seventh day after the attack every unfavorable symptom was found to have passed away, the whole being now convalescent.

Post-mortem examination of the one found dead, about six or eight hours after death.—Abdomen tympanitic. On opening the cavity and removing the viscera, the rumen was found to contain an ordinary amount of food, mixed with which was a considerable quantity of masticated paper, of the same description as that thrown into the yard. The epithelial coat of this and the other stomachs was easily detached, exposing the mucous coat in a high state of vascularity. The villous coat of the abomasum and also of the intestines was likewise highly congested throughout; the latter contained only a small quantity of very thin fluid. Patches of ecchymoses existed in various places, both on the peritoneal surface of the stomachs and bowels and also in the ventricles and on the surface of the heart. The heart contained a quantity of dark and *thinly* coagulated blood.

In conclusion, I may remark that my chief object in reporting these cases of poisoning is to give additional publicity to the danger which arises from the common and too careless use of such a deleterious article as Scheele's green.

ABNORMAL DEVELOPMENT OF THE RIGHT LUNG OF A LAMB.

By Richard Reynolds, M.R.C.V.S., Alfreton.

Although the following case does not possess any very important pathological bearing, yet, should you think that on account of its physiological interest it is worthy of consideration, I shall be glad of its insertion in your Journal.

A friend of mine, a farmer about nine miles from here, showed me the thoracic viseera taken from a lamb about a month old, that had died a short time previously. I much regret I did not see the parts *in situ*, but I subjoin an account of the appearances they presented upon examination after removal.

The heart and pericardium were healthy; the left lung, also, was perfectly formed and of natural size. It showed no signs of congestion. The anterior or supplementary lobe of the

right lung was also free from congestion, but its bronchial apex apparently gave rise to an immense air-vesicle, the parietes of which proved, upon closer inspection, to be a continuation of the pleural covering of the lobe. This sac was at least four times the size of the collapsed left lung, and its interior was crossed in many directions by a network of areolar filaments. The other parenchymatous pulmonary structures, from some undiscoverable cause, had not been developed in this lobe.

The history I learned from the owner was that the lamb was healthy until four days old, when he perceived that it breathed with difficulty. This continued, but the animal throve and was playful for ten days or a fortnight longer. It then lost condition, and gradually sank.

In conclusion, I may ask whether this case does not support the idea that the pleura and interlobular connecting tissue of the lungs are developed from a different set of vessels from those of the other pulmonary constituents?

SUCCESSFUL CASE OF RUMENOTOMY.

By John Arnold, M.R.C.V.S., Yoxford.

The following case of engorgement of the rumen of a milch cow of the Suffolk breed came under my notice during the month of August last, whilst staying in the country. The patient was the property of a farmer, who valued her highly for her breed. She was five years old, and about five months gone in pregnancy. She had been grazing on good upland pastures, on which was an average amount of fully matured grass, the summer being very dry. In addition to this she was supplied with hay and straw when taken up for the purpose of being milked.

The first indications of indisposition were those usually seen in attacks of colic, such as kicking at the abdomen, looking round at the flanks, quickened respiration, strong pulse, &c. The rumen, however, gave clear evidence of being overloaded with ingesta. The treatment at first consisted of the administration of a brisk purgative, composed of—

Magnes. Sulph., ℔jss;
Aloës Pulv., ℥ss;
Croton. farina, ℈j;
Zingib. pulv., ʒj. Misce.

Half of this dose was ordered to be given at once, and the other in four hours afterwards, mixed with a full quantity of tepid water. Without dwelling in detail on the symptoms, I may here state that all pain quickly subsided, but without any improvement taking place in the condition of the rumen.

For the next three days purgatives of various kinds were freely given, but without the slightest effect towards unloading the rumen. On the fourth day the pulse had attained 60 beats per minute, and was small in character. The patient now grunts at every expiration; the ears, nose, and extremities, are cold, and she persists in standing. The perfectly atrophied state of the rumen and the doughy feel of its contents on the application of pressure to the side precluded all hope of any benefit resulting from the further use of medicine, and, as a *dernier ressort*, the removal of the offending mass by opening the organ was adopted. Nearly two bushels of coarsely masticated food was extracted, to the immediate relief of the patient; for I ought to observe that, at the time of the operation, decomposition of the ingesta was rapidly taking place, and leading to a further distension of the rumen with gas. After the removal of the ingesta, and cleansing the parts, the coats of the rumen were first stitched together with ordinary silk sutures, and next the wound in the skin was closed in a similar manner. A small pledget of tow was likewise placed at the inferior part of the wound, with a view of its being removed the following day, in order to allow of the escape of any matter which might have accumulated. The wound, however, progressed most tractably from the first, and in about a fortnight was perfectly healed.

Directly after the operation two quarts of good oatmeal gruel, with ℥ss of Pulv. Zingib. et ʒij Ammon. Sesquicarb., were administered, and repeated at intervals of six hours for three doses. Very little in the way of medicine was subsequently required, it being manifest that good nursing was all that was needed.

Rumination quickly returned, and the patient gradually progressed to perfect convalescence. In a month's time she was giving her usual quantity of milk. During my professional career I have treated several cases which have ended fatally, and which probably might have been saved by timely resorting to the operation. In the narration of the case I have purposely avoided detailing minutiæ, and have only noticed its more salient points.

THREE CASES OF CŒNURUS CEREBRALIS IN CALVES.—TWO SUCCESSFULLY OPERATED UPON.

By J. Cooper, M.R.C.V.S., Market Weighton.

Agreeable to your request, I send you a history of the cases of *cœnurus cerebralis* in calves which have been brought under my care during my practice.

The first case occurred in July, 1863, the patient being one of a pair of twin heifer calves belonging to Mr. Green, of this place. He bought the twins when a few days old, in June, 1864, and kept them through the winter for grazing in the following summer. One of them became the subject of "sturdy" at the above date, and I was called on to give my opinion of the disease. There was little difficulty in diagnosing the affection, the symptoms being, on the whole, strongly allied to those in the sheep. The animal in question was continually going round the field (a twelve-acre one), keeping to the side of the fence. Sometimes, however, she would describe a circle of a few yards only. She rested very little, and would take but a few mouthfuls of grass at a time. The sight was very defective, as she would run her head against anything that came in her way.

As nothing could be done save the removal of the hydatid by operation, I proceeded to its performance by first making a V-shaped incision through the skin, and next taking out a circular piece of bone with the trephine. The hydatid did not present itself until the dura mater had been cut through, when the pressure of the fluid forced it partly out. I was unable, however, to take it away with the fluid in the cyst. After gently drawing it away with the forceps I placed a cork in the skull for temporary purposes, and gave the animal a dose of laxative medicine.

The cerebral excitement was most intense for some days afterwards, the animal continually going round at a rapid walking pace, and the weather being very hot at the time, and the box not so cool as could be wished, increased the excitement and fever. Two days after operation I removed the cork, when a little fluid escaped similar to that contained in the sac. The parts were now cleansed with some tepid water, and a pledget of tow placed over the wound. All went on well, and in about a month the parts were completely healed. During the illness there was a considerable amount of con-

stipation, which, however, was surmounted by purgatives. The animal was about two months before it fed naturally and properly. It was sold in September, about three months after being operated on, being at the time to all appearance well.

Case 2.—In September, 1863, the twin sister to the above-named animal began to show symptoms of "sturdy," but, it being in good condition, Mr. Green did not think it advisable to have it operated on. It was therefore slaughtered. I intended to have taken the hydatid out of the brain myself, but the animal was killed before my arrival, the stupid butcher driving the skull in with the pole-axe, and completely destroying the entozoon. I examined the brain as well as I could, and found that the greater part of it was absorbed.

Case 3.—The third case was the subject of the specimen I sent you a few days ago. I operated upon the animal on December 11th, 1864, and would then have very gladly sent you the hydatid had I known it would be of any service.

This patient was a yearling steer, which had been bred by Mr. Green, but was no relation to the other calves. Mr. Green sold the animal to a small farmer in this town in May, it being then about five months old. It was first noticed to be affected in the head in August, and, it not getting better, its owner sold it in November to another farmer. I was then consulted as to what should be done with the animal, and I recommended trephining as the only chance of cure. I stated to the owner that the operation was a dangerous one, but he nevertheless determined on having it performed, saying that the steer might as well die as be as it was. The animal did not persist in going always round in one direction, as the others, but would sometimes go in the opposite direction if its head got set on a wall-side.

I had some difficulty in diagnosing the seat of the hydatid, and therefore made the opening in the centre of the skull. It was found to be situated nearly in the centre, but inclining a little to the left side. When the cyst burst, the quantity of fluid that escaped led me to think there could be very little brain left. After the rupture I drew out the cœnurus very gently with the forceps. The after-treatment consisted in placing a cork in the opening, as in the former cases, and giving the animal some purgative medicine. I also had the animal placed in a darkish loose box. The cork was removed in

two days, and the wound left nearly to nature. It healed in the course of a few days.

The cerebral excitement in this case was very trifling. The animal has gradually improved in health and condition, and is now, to all appearance, quite well. As to the etiology of the disease, I leave that to you. There was apparently nothing about the farm to lead one to suppose that the animals upon it would be more subject to this disease than on any her.

ACEPHALOCYST LOCATED IN THE SEPTUM AURICULORUM OF THE HEART OF A COW.

By Thomas Taylor, M.R.C.V.S., Burton-on-Trent.

I have forwarded to your address at the Veterinary College, to-day, the heart of a cow that I removed this morning. Upon examination you will find a cavity in the *septum auriculorum*, from which, when I cut into, about four ounces of colourless fluid escaped. The cavity was insulated, and had no outlet that I could detect.

The cow had been in her owner's possession for upwards of six years, and was never known to have a day's illness. This morning (May 2nd) she gave her usual quantity of milk and was turned out to grass, and whilst grazing was seen to fall, and before the man could reach her was dead. As the case appears to me to be a singular one, I am desirous that you should see it.

[An examination of the heart showed that an acephalocyst was located in the substance of the *septum ventriculorum*, and that one of the *carnæ columnæ* of the right ventricle, lying directly over the cyst, was simply pale in colour. With this exception, however, no structural disease, apart from that which belonged to the cavity containing the acephalocyst, could be detected. The external surface of the wall of the cavity was white in colour and firmly attached to the substance of the heart, while the inner was of a yellowish hue, and partially lined with effused lymph. The form of the cavity was irregular, and, in one place in particular, it was drawn out into an elongated and narrow neck. The acephalocyst closely fitted the cavity, being necessarily of the same shape. Three or four *echinococci* only were

found within it, the majority having doubtless escaped with the fluid which had been contained in the cyst. They were fully matured, and possessed all the well-known characters of these entozoa. Acephalocysts are very common to the liver, lungs, &c., but are rarely located in the heart. The case is interesting and instructive, and adds value to our records of entozoa as met with in domesticated animals.]

THE SOCIAL POSITION OF THE VETERINARY SURGEON.

By R. H. Dyer, M.R.C.V.S., Torquay.

It occasionally produces a salutary effect upon the minds of individuals to remove from the smoke of one's own chimney. Having the good fortune to be present at the annual meeting of the profession, in Red Lion Square, I must confess I derived great pleasure therefrom. The fact of so large a section of the profession being there must have been a source of gratification to the President, Mr. Hunt, while it speaks volumes as to the feeling entertained towards him. Since my return I have reflected upon the remarks made by some of the speakers in reference to the social position of the veterinary profession. Doubtless there are some amongst us who hold and can maintain a good position in society, and are often the guests of great people; there are many also who are respected and esteemed by all grades of society, not merely for the professional abilities they possess, but from their private character being irreproachable.

If, however, the entire body entertain an idea that they will attain to the position held by members of the human profession, the sooner they rid themselves of it the better, even supposing birth and education to be equal. There are ample reasons why this cannot take place, and I will venture to name some of them.

We will suppose two young men—brothers—within a year or so of the same age, and as near alike in disposition as is usually to be found in a family, educated at the same school, and finishing their scholastic education at about the same period, to be sent, one to the Royal Veterinary College and the other to the London University, to become members of their

respective professions, namely, *human* and *veterinary* surgery. These young men work hard, obtain their credentials, and are sent out into the world to earn their bread. The human surgeon will face for the army, navy, or an emigrant ship; if neither of these appointments are attainable, he may possibly obtain an assistancy to a private practitioner. In either position he is, and can appear, as a gentleman; he may have to attend paupers for the "union doctor," still he is a gentleman, and so long as he conducts himself properly no person will attempt to reduce him in his social position. Should he be talented, then, his position is *sure* to be a good one in every sense of the word. We will carry him a little further into the stream of life, and watch him there. He endeavours to establish himself in practice; he has talents, qualifications of no mean order, testimonials of the best kind, and one or two introductions to persons residing in the neighbourhood; he contents himself by placing a brass plate, with his name and profession, upon his hall-door, and leaves the rest to Providence. His friends introduce him to *their* circle, and at length he is sent for to visit, perhaps, a sick child, or probably a sick wife. Now comes the time of trial! Where does his introduction take place, and to whom? In the chamber of the patient, and to a member of the household, whose life is looked upon by all in that house as of *more value*, in all probability, than a whole kingdom. The surgeon is at once received, not only as a medical practitioner, but, if he has the luck of being a good conversationalist, and can make himself agreeable upon this his first visit, as a friend; and should he succeed in restoring his patient to health, his fortune is made. The *servant maid*, the *butler*, the *footman*, have nothing to say to him, they would not venture to offer *their* opinion as to his attainments nor his manner of address; nor would the husband, wife, or child, be likely to mention his name to their domestics otherwise than in *gratitude* of his having saved and restored their relative. Indeed, if a human surgeon has good address and can please the ladies, no power on earth can displace him; taking it for granted, of course, he is talented and successful in his practice.

Now we will take a peep at the veterinary surgeon. The same opportunities are not afforded to him as to his brother. Ships require no horses to draw them. Only a few members of the profession are required for the army, although there are many more army veterinary surgeons now than there were twenty years ago, and besides which very few assistants are needed; then, what is to become of all those who

have obtained diplomas from the Royal College of Veterinary Surgeons? If they are not wanted for the army, they must either seek for an assistancy or enter at once into practice; the *latter* is what nine out of ten are obliged to do. Let a newly made graduate set himself down where he may, he will find that others are in the field before him, not perhaps qualified men, but men who have the confidence of a large section of the community. These men are those known as *farriers, cow-leeches,* &c. They require but a small income, comparatively speaking, to support them, hence they can afford to work cheaply. It costs them little to feed their hack, as he picks up a bit here and there on his rounds; a small share early and late is all *he* requires; and so far, this is cheap forage. Their own bodies are kept up much in the same way; they get a bit here and there; the wants of the family at home are easily supplied, a hundred a year in *their* establishment is as good as double that sum in the house of an educated and qualified man. Well, the young "vet." has proclaimed himself a settler in a town; he must not only place a brass plate upon his door, but he must send his name round the country through the medium of the newspapers, or he will not be known. If he appears well dressed and gentlemanly in his manner, he is set upon at once by those who, I am sorry to be obliged to say, have much, and some, indeed, unlimited power in the stable, viz., coachmen and grooms. He is at length sent for to a case, but to whom is his introduction? Suffice it to say, not the lady of the house or her sick child, but to those who have the care of the occupants of the stables—his patients—the horses.

The owner of the animal may or may not be present; and should he be engaged, the "vet." has often to remain *in and about* the stable, awaiting his visit; or, if the owner be a man of large experience in horseflesh, he may invite him into the house. As a general rule, however, the veterinary surgeon will be found waiting (as before stated) in the stable, having the groom or horsekeeper as his companion. If he does not talk with the servant he makes a bad impression, to be used against him on the first opportunity. How different all this is to the reception met with by his brother, the human surgeon. Again, he has but little chance of making his acquirements known to his patron, for in many instances, should he desire to explain a knotty point, he is cut short by being told he is in a hurry to keep some engagement, and that any instructions he may have to leave with the groom will be carried out in a proper manner.

Individually, I have often met with noblemen and gentlemen who have ushered me into their studies or dining-rooms, have treated me with the greatest respect, and have proved themselves hospitable individuals. I have, however, met with others who have appeared so proud, or so haughty, that it seemed too much trouble to them to pronounce my name. This is not overcoloured; it is perfectly true.

With regard also to the instructions of the "vet." being carried out, there is often much doubt. If the groom or coachman be what is termed a *nice respectable man*, a good judge of a horse, and if he entertains a favorable opinion of the surgeon, he will no doubt see that the instructions are carried out; but, in many cases, all orders with reference to food and management are but little attended to. For example, if a bran mash be prescribed, we shall probably find ten times more than the patient could eat put into his manger or trough; and, instead of removing it after half an hour or so, it is allowed to remain under the nose of the patient for many an hour together.

Compare this treatment or nursing with that given to the brother's patient. A little—very little—nice gruel, beef tea, chicken broth, or steam pudding, as the case may be, is made and presented to the patient. If not relished it is taken away, but only to make room for some other delicacy; it is not allowed to remain a moment longer than needs be; the patient has no time to become disgusted at its appearance. Again, if the disease under which the veterinary surgeon's patient is suffering requires a different atmosphere, how seldom is it attainable; if medicine is required four times a day, how often does he find the patient annoyed and rendered uncomfortable if the attendant has to administer same! Indeed it is better frequently to watch the patient and dispense with medicine altogether, leaving nature to herself, rather than her laws should be interfered with by the improper proceedings of the horsekeeper. Many of my worst cases I have seen pull through because of the *non-interference* of meddling grooms. These cases, however, be it said, were under my care, at my own stables.

The human surgeon has but few of these difficulties in his way; his lady patient, if unable to assist herself to the medicine, will at all times have the help of some member of the family, or a nurse who is fully up to the mark as *tender* in such cases. Again, the patient don't inquire of her doctor how much will be charged for curing her; the horse-owner often does. The human patient implores her medical adviser to *save her life* at *any* cost, even the loss of

a limb. "*Save life, if possible,*" is the patient's motto. "Save life, if I can," is the motto of the physician. How diffcrent this is to what *we* meet with. If an old horse is lame, and our attention called to him, the first qucstion asked is, "*Can he be cured?*" next, how long will it occupy to do so? thirdly, what will bc the cost? All thcse questions the veterinary surgeon is expected to answer in a breath, and if he cannot answer them at oncc he is often looked upon as a fool. There is not much fair play shown to us. If we could succeed in obtaining but a small share of thc kindness and consideration which the physician so largely shares, together with a littlc more of this world's gold, of which he ofttimes receives so largely, it would be the means of placing the members of our profession upon a better footing than they appear to stand upon at prescnt. Unfortunately, however, many veterinary surgeons acquire a habit of associating with coachmen, grooms, and horsekeepers, oftcn drinking with them, and so on, than which nothing has a greater tendency to kecp them low in society or upon a par with these people. A good deal of this is, however, the fault of the horse-owner, for in many stables the groom is looked upon by his master as a very clever and experienced man in diseases of the horse; indeed, he is often thought almost as much of as the veterinary surgeon. Should the servant know the weak point of his employer, he takes care to *feed* it; he becomes, for a time, a favorite, and his word is law. To make a "long story short," it may be taken as a fact that the human surgeon depends upon the goodwill of his *patients* for patronage and support, while the veterinary surgeon has, in *many* instances, to look for support to the men *who have the care* of his patients. If the human surgeon had to look to the *nurses* for support, how little could he rcly upon them! Our patients' nurses are *all in all!* This is about the sum and substance of the difference which exists in the two professions.

As to the veterinary surgeon cherishing the hope that his social position will undergo a speedy change, appears to me to be futile. A London practitioner can have but little idea of the difficulties and drawbacks met with in the country. Onc thing which will tend more than any other that I know to advance the profession, is the formation of "Provincial associations." This, however, must be a work of time. In my opinion the public rcquires to be educated and enlightened as to what a really qualified man is. Up to the present they are in a statc of ignorance. So long as our patients are left to the management of servants, whose opinions are sought, received, and adopted, so long will the veterinary

surgeon's path be strewn with thorns. It is a vain hope to think a change is near at hand.

In conclusion, I will avail myself of the present opportunity of saying a few words in reference to "provincial veterinary medical associations." Although my name was mentioned by Mr. Dray, in returning thanks after the associations had been toasted at the dinner of the profession, I did not wish to occupy the meeting, at that hour of the night, by making such remarks as the importance of the subject seemed to demand, and therefore declined to address those who sat at the festive board. Since writing to you upon the subject Mr. Raddall has done me the honour of becoming my guest for a day and a night, when we discussed the subject at issue. Mr. Drake, of Exeter, in a letter to me about the same time, expressed his willingness to co-operate with us. Mr. Collings, of Plymouth, intends to assist also. Mr. Boddington, of Cardiff, has addressed two letters to me upon the same subject, urging us to include South Wales. I arranged with Mr. Raddall to wait for a given time, to learn how many members of the profession corresponded with me upon the subject, when I was to issue a circular letter to each member in the district, asking him to give his views as to the desirability of establishing a society. The time has now arrived for me, or some other person, to take action. I will—as soon as I conveniently can—address every gentleman holding the College diploma within the four counties, and likewise a part of South Wales. I trust a fair number of veterinary surgeons will at once come forward and lend their help in so desirable and legitimate a cause, as by doing so, and working well together, it will have the effect of producing good results. Some of the evils will be uprooted, I have no doubt, and we shall place the "*right man in the right place*," and point out the proper place for coachmen, grooms, and horse-keepers.

THE PROGRESS AND PROSPECTS OF THE VETERINARY PROFESSION.

By Thomas Walley, M.R.C.V.S., Welshpool.

It is comparatively but a short time since I, in conjunction with many of my professional brethren, were gladdened by the news that a fresh *status* was to be given to the profession by the institution of an examination of the pupils prior to their admittance into the College. At present, however, this is comparatively a small matter, inasmuch as the examination is only of an ordinary nature; nevertheless, any step in the right direction must be hailed as an omen of something better to follow. This examination will doubtless be the means of preventing grooms, and men of that class, entering the College; but I would ask if simple scholastic education, after all, is of such great importance? I opine not. There are many men of the present day, some of whom stand in the first rank, whose early education, were it looked into, would be found to have been miserably deficient; but such men do not shine any the less brightly in consequence thereof. Scientific knowledge is doubtless more easily obtained by the educated than by the uneducated man; still, we often find that the latter far outruns the former in the knowledge of the profession he has chosen. This may be accounted for in two ways—*first*, by the former, who, feeling proud of his attainments, thinks he can easily learn all he wants in a short time, whilst the latter, conscious of his want of knowledge, drudgingly perseveres to attain it, and is sure in the end to meet with his reward.

Secondly. The uneducated man has frequently seen the most practice, and when he returns to follow his avocation in the country he will most certainly be preferred to the man whose educational qualifications are good, but whose practical knowledge is bad.

The educational examination aims at one good point, viz., the social elevation of the profession, and herein lies one great secret of success in the practice of veterinary surgery, for how often do we hear such remarks as the following made use of?—"Why! I am surprised such an intelligent man as Mr. A— is a veterinary surgeon. I thought veterinary surgeons were quite a different class of men." Remarks of this kind are far more frequently made in counties in which the qualified and intelligent practitioner is, as it were, a new

importation. If a veterinary surgeon keeps his social position good, there is little doubt, if he is at all conversant with his profession, of his keeping his practical standing good.

A vast deal of benefit, I doubt not, would accrue to the profession by the institution of a preliminary *practical* examination in connection with the educational examination; *that is*—let each candidate, on his presenting himself for admittance into the College, be examined as to his practical knowledge. I will not go so far—albeit a great desideratum—as to say, let him show his indentures; but let him give proof, by his answers to the questions submitted to him, that he knows something of the practical part of the profession. He is a tyro, indeed, unfitted for any profession, who does not possess the everyday requirements of reading and writing. There are, however, many who know but little of the really practical and legitimate part of their profession on becoming pupils of the College, and I hesitate not to say that many of the so-called qualified veterinary surgeons had never seen a day's practice previous to that time. What is the consequence? Why, having obtained his diploma, the newly made graduate, perchance without thinking of the matter, goes forth into country practice with high-flown notions of his dignity and importance as a qualified veterinary surgeon. The inhabitants of the neighbourhood in which he is located say, "Oh! let's try the new vet.," and when he goes to visit a sick animal he finds himself at a loss upon practical matters. He knows, indeed, next to nothing of the habits in health of the animals he is called upon to treat, and but little of the manner of their comporting themselves when labouring under disease. He becomes embarrassed, and perhaps may make a remark which the cowherd in attendance laughs at, or perchance he mistakes a case of peritonitis for enteritis, or one of pleuro-pneumonia for inflammation of the lungs. He, however, gives the disease some high-sounding title, which the owner in vain endeavours to remember, and, when he is gone, the latter thinks, or more probably says, "Well! he may be a qualified vetenery sargeant, but I dunner think much on him, and I'll send for th' ould farrier, and see what he says about it." Th' ould farrier comes, and, with no small amount of blustering, says, "Oh! hers suffering from some'at else; there's nothing the matter with her lungs, or her bowels." The chances are, when the animal dies, the farrier is found to be right, and thus he is enabled to hold his position, and to think that the "vet." won't do him much harm, although he has got his diploma. And what is the end of this? Why, that the young surgeon either makes a compromise with the

farrier, and allows his name to appear in partnership, as a sort of farrier-physician, or he gets disgusted with the profession, and, at a great pecuniary loss, gives it up, and takes to something else more congenial to his tastes and knowledge.

Another great drawback to the profession is the assuming, by persons who have no just right to do so, the title of Veterinary Surgeon. I have known an instance where a non-graduate had practised for upwards of two years, and no one was aware of the fraud; and, more than this, that he actually obtained an appointment as *veterinary surgeon* to a regiment of yeomanry cavalry.

How is this to be obviated? An old and valued friend of mine some time ago made the following proposition to me on the subject:—"Let the members of the profession, in each county, join together, and publish a list of the qualified veterinary surgeons in the leading advertising mediums, and at the same time solicit the editors to give the list a prominent place." If this were done, every one would know who were qualified and who were not. Again, insurance companies do an immense amount of injury to veterinary surgeons, particularly to those who may be practising in dairy counties. A man insures his horses, or his other stock, and becomes careless about them. If an animal is taken ill he avoids sending for the veterinary surgeon until the animal is nearly dead, and then only, in many cases, for him to state in his certificate that he had attended such and such an animal, and that it had died from such and such a disease. Or the insured sends for the farrier, because he is cheaper, and also because his certificate will do as well as that of the veterinary surgeon. If insurance companies would insist upon all animals being properly attended at the onset of disease, and also that they shall be placed under the care of properly qualified veterinary surgeons, much good would accrue to the profession.

In concluding these imperfect remarks, I would add a few words upon the moral and social condition of the profession. These, I regret to say, have been brought to a low ebb. *First*, because in the provinces drunkenness has prevailed to a great extent. People hesitate to employ a man whom they know to be addicted to this vice. Drunkenness leads on to other and worse moral and social evils, which it is unnecessary to dilate upon here, and renders, in too many instances, the name of veterinary surgeon *an opprobrium* in the estimation of neighbours and acquaintances.

Secondly, the want of professional unity and professional concord amongst veterinary surgeons are things greatly to

be lamented. How often do we see two rival practitioners in the same town doing all they can to injure each other in every conceivable way? Such things should not be. Harmony and good feeling ought to exist between us—a spirit of freemasonry—showing to the world the position each veterinary surgeon occupies in the estimation of his fellow-practitioner.

Let all, then, work together, and let each member of the profession avoid commencing practice until he has made himself master of all the practical as well as scientific details of his profession, and thus give proof to the world at large that he is *superior in every respect* to the common charlatan. If this were so more good would result than any charter could secure, and the name of farrier would soon be reckoned amongst the things of the past.

Facts and Observations.

VACCINATION FROM THE COW.—It is stated that all the 450 pupils of the College of Vaubes, France, have lately been vaccinated with lymph taken from a heifer. The operations are said to have *all succeeded*, even upon boys who, as infants, had been vaccinated in the ordinary way.—*Lancet.*

[Success to the extent here mentioned rarely attends on vaccination with *primary* lymph. Besides which, the quantity required for 450 persons, being yielded by one animal, is equally extraordinary. Upon the whole, we are inclined to believe that the facts of this case have been incorrectly given.]

EPIDEMIC AMONG DOGS.—A fatal blight seems to have fallen on the dogs at Lemberg, in Austria, where these interesting friends of man have been dying by thousands. News has also been received of a like fatal mortality among the dogs at Marburg, in Styria.

AN IRISH OUTRAGE.—Early in the morning of Thursday, May 9th, some diabolical ruffian went to the stable of Mr. John Butler, of Minawn, adjoining Callan, a respectable

farmer, and deliberately cut one ear off every beast therein, comprising five horses and a donkey. The deed must have been committed early in the morning, as it was not till between twelve and one o'clock that the owner brought into the stable one of the horses, a most valuable animal, worth at least £100.—*Kilkenny Moderator.*

Death of a Horse from Fright.—An almost unprecedented death of a horse from fright took place near Bingham, Notts, on Saturday, May 13th. Edmunds's menagerie left that town at an early hour, *en route* to Newark, where the annual "May Fair" was about to be held. One of the caravans was drawn by a camel, and this being met by a horse and cart coming in the opposite direction, belonging to Mr. Smith, farmer, of Flintham, the horse caught a sudden view of the strange beast of burden, gave a sort of snorting scream, plunged violently, and dropped down dead.

An Ox Poisoned by Tobacco.—An ox belonging to a farmer near Periguez was killed a short time since by eating a small quantity of tobacco which was being conveyed to the storehouse.

Brushite.—A new mineral has been discovered by Mr. W. E. Brown, in a cargo of phosphatic guano from an island in the Caribbean Sea. It has received the name of Brushite, after Professor Brush, of Yale College. The mineral is found in the guano as seams, varying from a fourth to an eighth of an inch in breadth, in the form of small but very perfect crystals, of a yellowish-white colour. When heated in a closed tube before the blowpipe the mineral whitens, and at an incipient white heat gives off water. Chemical analysis revealed the presence of lime, phosphoric acid, and water, with barely discernible traces of magnesia and alumina. In the polarizing microscope it showed a vivid succession of colours.

Trichinous Ham.—At Lubeck, Germany, the family of Senator Dittmers have just sustained a severe bereavement through eating smoked ham *uncooked*, which turned out to be infested by trichinæ (small threadlike worms). Out of seven persons attacked four are already dead.

Removal of Nitrate of Silver Stains.—M. Obernetter proposes to remove stains of silver from the hands, clothes, &c., by the application of a solution of chloride of

iron by means of a brush, and afterwards washing. He considers it preferable to the cyanide of potassium, as its use is not dangerous.

PRODUCTION OF SUGAR IN THE ANIMAL ORGANISM.—Dr. Bence Jones lately read a paper at the Royal Society, in which he describes the production of sugar in the fluids of the body by means of extreme cold, attributing its formation to deficient oxidation of the carbonaceous matters of the food. A grain of starch, he says, enters the system, is transformed into sugar, and, being acted on by oxygen, passes out as carbonic acid and water. This is the result of its perfect combustion; but if oxidation stops at any stage imperfect combustion occurs. Such may result from insufficient oxygen, or from excess of amylaceous and allied matters, or by lowering the temperature of the body so much that chemical action is checked. With less perfect combustion oxalic and other vegetable acids, he says, are formed; with the least combustion sugar results. It follows, therefore, that sugar should be found in the urine when any of these causes reduce the oxidation of carbonaceous matters in the system to its minimum. In other words, by stopping the combustion going on in the body *diabetes* may be produced artificially.

SUGAR IN THE BLOOD THE RESULT OF THE ACTION OF SALIVA ON FOOD.—Saliva, like gastric juice, says Dr. Hayden, is secreted in quantity strictly proportioned to the immediate wants of the system, and quite irrespectively of the absolute quantity of food taken. A certain proportion of the starch of the food, varying according to the quantity taken and the necessity of respiration, escapes the converting action of the saliva, and is stored up in the liver. This liver-starch is being taken constantly back into the blood, to supplement the respiratory elements of the food, and in the blood is converted into sugar, probably next into lactic, and finally into carbonic, acid. Hence the presence of sugar, normally, in small proportion in the blood of the right side of the heart; hence, likewise, its presence in the right side of the heart of animals fed exclusively upon meat, in whose portal blood not a trace of sugar is discoverable.

DIALYSIS APPLIED TO ASCERTAIN THE CONSTITUENTS OF PLANTS.—In a paper read at the late meeting of the Pharmaceutical Conference Dr. Attfield states that he had dialysed a few plant-juices, the first that came to hand; and

from each he had obtained some of the crystalline constituents. The tops of the common potato yielded a crop of nitrate of potash, some cubes of chloride of potassium, hexagonal crystals not analysed, sugar, and an ammonia salt. The deadly night-shade gave nitrate of potash, an unknown magnesia salt in square prisms, sugar, &c. Pea-pods yielded only sugar. The common garden lettuce contained nitrate of potash, tetrahedra of undetermined composition, sugar, and ammonia. Cucumbers furnished sugar, ammonia, and sulphate of lime. The cabbage also furnished sulphate of lime and ammonia. Stramonium contained so much nitrate of potash that dried portions quite deflagrated on being ignited.

From these experiments the author thought the proposed application of dialysis promised to be of great service, directly and indirectly, in investigating vegetable physiology.

He had also detected the existence of traces of certain crystalline principles, not referred by him to any particular substance, which he thought might possibly be natural salts of the alkaloids.

Parasitic Disease.—Those persons who maintain that parasitic disease is caused by the condition of the animal food that we eat, will find evidence in support of their theory in a circumstance that has lately come to light in India. The disease called *trichiniasis* is said to be very common among the natives of that country, and a short time ago an Englishman, suffering from a malady unsuspected at the time, but which was afterwards found to be this disease, was admitted into the Calcutta Medical College, and died there. The Sanitary Commission have investigated the causes of the disease, and trace it to the quantity of indescribable filth on which sheep and pigs are fed in India. The meat sold in the bazaars is believed to be in a polluted state from this circumstance, and to cause *trichiniasis* among those who eat it. Europeans are generally more safe from the disease than natives, because at most stations there are "mutton-clubs," which supply the meat of properly grain-fed sheep.

Parasites in Typhus Fever.—A deposit of putrid matter takes place inside the mouth in typhus fever, which poisons the air in its passage to the lungs, and quickly becomes a nidus for parasites. Some of the worst symptoms of the disease are now supposed to arise from this. Of course it may be easily removed, and disinfectants subsequently employed.

THE VETERINARIAN, JUNE 1, 1865.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

THE NEW VETERINARY COLLEGE.

As "coming events cast their shadows before them," so a few weeks since a rumour pretty generally prevailed that a new Veterinary College was about to be established at the west end of the metropolis. Little heed, however, was given to the report until a paragraph appeared in the *Daily Telegraph* of May 5th, setting forth that it was proposed to transfer to the English capital the "New Veterinary College" of Edinburgh. A similar announcement has since been made in *Bell's Messenger*, and also in the *Medical Times* and other periodicals, so that we are no longer left in doubt upon the question. If, however, we look calmly at the matter, we shall see that this announcement is little more than an admission that the "Edinburgh New Veterinary College" has come to grief, and that all the "puffings" which reached our ears were only so many proofs of its being *in articulo mortis*. Its death, like most demises, leaves many a bitter pang behind, which can only be removed, it is said, by the repayment in this instance of some ten thousand pounds. Alluding to this subject, the *North British Agriculturist* says, "The pecuniary obligation arising out of the maintaining of the college during the eight years of its existence in Edinburgh is stated to have been considerable. It is rumoured that the annual loss has amounted to upwards of one thousand pounds."

This result of the speculation has taken no one by surprise who knew anything of the real working of the institution. Indeed it had long since been foretold, and speculations have often been rife, especially at the beginning of each succeeding session, as to whether the college would be able to open its portals for the reception of pupils. Whether these things speak well or ill for the success of the

new scheme in London, we must leave others to judge. The promoters will, we think, find heavy work to do, aided or not by the trustees of the Edinburgh institution, who perhaps imagine that they see some chance of satisfying the pecuniary claims alluded to if they join in founding a new college in the metropolis. It seems that the establishment of the "Royal Albert Veterinary College" is to be on the joint-stock principle, and for this purpose the sum of *seventy-five thousand pounds* is to be raised. The prospectus necessarily sets forth numerous advantages to the shareholders, and among them it modestly states that—

"With a view to the accomplishment of the object, it is proposed to transfer to London the New Veterinary College of Edinburgh, presided over, under 'Royal Sign Manual,' by Professor Gamgee, whose ability and eminent services in the advancement of veterinary science have acquired a wide-spread reputation. Professor John Gamgee has been solicited and induced to accede to a preliminary arrangement, whereby his whole staff of professors, teachers, and students, museum, library, diagrams, apparatus, &c., shall be secured for the London College."

No one who reads this paragraph will be at a loss, we should imagine, to recognise its author. It is certainly a clever way of disguising a necessity.

To further assist in carrying on the college, and supporting its large expenditure, a report has been industriously circulated that certain funds possessed by the University of London for the founding of an Animal Sanatorium would be handed over to its governing power. We are enabled, however, to state that the disposal of these moneys is still an open question, and that no appropriation of them can be made for some time to come. What may be the ultimate course adopted by the Senate of the University remains to be seen; but, if we mistake not, means will be taken which will exercise a powerful influence over their deliberations, and make them hesitate to connect themselves in any way with a joint-stock company. It is the pride of Englishmen to venerate and support old institutions. This conservatism belongs to no class, being as inherent in the peasant as in the peer; but if it be more strongly developed in one body than in another, it is so in the Senate of our several Universities. On this we may

safely rely. Claims of superiority will doubtless have their full share of influence; and we see no reason why the Alma Mater of the profession should not be made as superior in every respect to any allied institution now existing on the Continent, of which we hear so much as models of perfection, as it has ever been to any in the British Isles. The governors of the College are fully alive to the growing necessities of the times, and will perseveringly labour to remove all difficulties which may stand in the way of advancement. Much has been accomplished of late years, and a good assurance given to the profession and the public that their interests are in safe keeping, and that progress is identified with the proceedings of the Royal Veterinary College.

THE ANNUAL MEETING OF THE PROFESSION.

The full report of the annual meeting of the profession, which we insert in another part of our journal, obviates the necessity of our doing more than direct attention to the report itself. The meeting was well attended, and greater interest was evidently taken in the proceedings than we have been accustomed to see. The chair was taken by the President, who was supported by most of the members of Council.

As the first Monday in May—the day appointed by the charter for the meeting—proved this year to be the first day of the month, and as twenty-one years have passed since the Act of Incorporation was obtained, so it may be said that the "May-day" of 1865 saw the profession completing its minority, and entering, as we hope, on a career of greater success and more honoured reputation. Let it be ever remembered that the body is composed of many members, each having his own especial office to perform, and that all advancement depends on individual exertion, and we may add also, on individual good conduct. The profession therefore will ever be just that which its several members labour to make it. No legislative enactments can give respectability, nor can any fostering care impart knowledge.

The good qualities of men are said to be apparent so soon as they are thrown on their own resources; and now that the profession enters its majority, let it be patent to everybody that it is jealous both of its name and its honour; if so, elevation and advancement will be certain. Much might be said on a subject of this kind, and said, too, with advantage. We refrain, however, from adding to these remarks, and the more especially as our pages contain two important letters relating thereto, from independent members of the profession. Let us all strive to cultivate the better qualities of our nature, having respect for ourselves and respect for each other.

We have only one word to say about the dinner, and that a word of praise. Everything passed off to the entire satisfaction of all present. It was well attended, better indeed than it has been for several years past. Conviviality, harmony, and friendship were the presiding graces.

Extracts from British and Foreign Journals.

REPORT OF EXPERIMENTS MADE UNDER DIRECTION OF THE LORDS OF THE COUNCIL AS TO THE VACCINATION OF SHEEP, AND AS TO THE INFLUENCE OF SUCH VACCINATION IN PREVENTING SHEEP-POX.

By James F. Marson, Esq., F.R.C.S., Resident Surgeon of the Smallpox Hospital, and

Professor Simonds, of the Royal Veterinary College.

(*Continued from p. 325.*)

In further commenting on Mr. Ramsay's statements, we have to notice, in the next place, his proceedings in the case of the vaccination of the sheep belonging to Mr. Ellis, of Triplow. It is, however, necessary *firstly* to observe, that Mr. Ramsay considered, in 1848, that vaccination was of little use unless the lymph was first passed through the system of the cow, before being used upon the sheep. This,

judging from a letter to the editor of the *Times*, dated December 13th, 1848, he appears, contrary to the experience of other persons, excepting, perhaps, his then assistant, Mr. Sprague, to have had no difficulty in doing, and of obtaining thereby a sufficient quantity of lymph for vaccinating hundreds of sheep. Mr. Ramsay thus writes:—"Smallpox amongst sheep having made its appearance in this neighbourhood some months since, I advised a friend of mine to have his flock vaccinated. I introduced some vaccine lymph into the system of the cow, and from that source his flock has been vaccinated. The disease passed through its different stages, both in the cow and in the sheep, precisely as it does in the human subject. Some thousand sheep have, in this and the adjoining parishes, been vaccinated in this manner, not from each other, but every sheep direct from the cow."

With lymph thus procured, Mr. Ramsay himself, as he informed Mr. Simonds by letter, vaccinated ten sheep belonging to Mr. Ellis, of Triplow, on November 18th, 1848. Two of these sheep he subsequently selected to be tested by inoculation with the virus of sheep-pox, and, according to agreement, they were sent for this purpose to the Royal Veterinary College. Respecting the vaccination and selection of these sheep, Mr. Ellis wrote as follows:

"Triplow, *Dec. 5th*, 1848.

"Dear Sir,—In accordance with your request I have had the selection of two sheep made by Mr. Ramsay, who now declares them as having recovered from the vaccine disease, and in a proper state for any experiment to be tried upon them. I therefore intend sending them by the six o'clock train from the Whittlesford station, directed to you. Hoping the result of the operation may prove a public benefit,

"I am, yours faithfully,

"J. Ellis."

"To Mr. Simonds."

About the vaccination of these sheep by Mr. Ramsay himself there can be no doubt, for in a subsequent part of the letter to the *Times*, just referred to, he says—"Two sheep, previously vaccinated by me, have been sent to Professor Simonds, for him to test the amount of protective power (if any). I shall also test it myself, by inoculating some previously vaccinated sheep with smallpox lymph, and then turn them in among sheep labouring under smallpox. The result of my experiments shall be forwarded to you, should you think them worthy of insertion in your paper."

The two sheep arrived safely at the Veterinary College,

and on December 12th, after having recovered from the fatigue of the journey, one was *inoculated* with the virus of sheep-pox in two places on the inner part of the left thigh. The virus employed was *sixteen weeks old*, having been taken from a natural case, August 23rd.

We shall quote the particulars, in full, of the experiments with these sheep, from notes made at the time.

CASE 1.

"December 12th, 1848.—Inoculated one of Mr. Ellis's sheep.

"6th day after inoculation.—Both punctures have taken effect.

"9th day.—The inflammation has steadily increased up to this time, and seems now to have reached its limits. Roseola variolosa has appeared in various parts of the skin, especially on the inner sides of the arms and thighs. The animal has fever and loathes its food.

"10th day.—Papulæ are being formed, and can be readily felt in the skin.

"12th day.—Papulæ are well developed; the constitutional symptoms remain the same.

"15th day.—Some of the papulæ have declined; vesicles have formed on others. The animal has less fever.

"Subsequently the eruption passed regularly through its several stages; its progress differing in no respect from that observed in an ordinary case of inoculation without previous vaccination."

(*To be continued.*)

PREVENTION OF DISEASES IN ANIMALS ACT—COLONY OF VICTORIA.

(*Concluded from* p. 333.)

THE clauses referring to scab are equally stringent. To enable inspectors to carry into effect the provisions of the Act as regards catarrh and scab, every owner of sheep is required within one month after the Act comes into operation to register at the office of the chief inspector, or deliver to the inspector in and for the district, a description of the mark or brand in use for marking or branding the sheep. Every sheep above the age of six months to be marked or branded, the mark not to be less than three inches in length, and in a conspicuous way with pitch, paint, or some suitable composition.

Sheep travelling require to be branded with the letter T, in a conspicuous place. The fines and forfeitures are, if strictly enforced, calculated to force many flockmasters to dispose of their runs and stock grazing upon the runs; this will tend to depreciate the selling value of runs and stock.

The following are some of the provisions for attempting to impede or hinder any inspector from examining sheep, on conviction before any two justices of the peace, to forfeit and pay any sum not exceeding £100. Every owner of sheep infested with scab, and for which a license has not been obtained and renewed from time to time, to forfeit and pay the sum of three shillings in respect of every sheep so infected. Inspectors to issue to owners a license to keep infected sheep for six months for the purpose of cleaning the same, license threepence for each sheep. The license to be renewed for four months for each sheep infected on the payment of sixpence, ninepence for the second renewal, and an additional threepence beyond such sum of ninepence for every additional renewal of license. The sheep to be branded with the letter S, not less than three inches in length. The penalty for neglecting this branding of sheep licensed, or those affected but not licensed, is a sum not exceeding £100. Every owner to be liable to a fine of £20 for neglecting within fourteen days to deliver to the inspector a correct account of all sheep infected with scab. The owner to alter the brand of the sheep at the request of the inspector, conviction on refusal to pay a sum not exceeding £50. Every owner of sheep may examine any sheep which shall be driven through, or over, or may be found upon, any part of the lands or runs occupied by him or his employer. Sheep to be detained unless the owner can produce an authority in writing from any inspector to remove such sheep; penalties for infringing this clause not less than £30 or more than £200. Any four or more proprietors of sheep who occupy runs within six miles of any land on which infected sheep are depastured whether kept by the authority of a license or not, can require any inspector to destroy such sheep.

By the 22nd clause, any proceedings under this part of this Act taken in reference to any one sheep infected in a flock, such flock shall be deemed and taken to be so infected, except the owner can produce proof of certain facts to the satisfaction of the justices. By the 23rd clause, sheep which have been infected with or dressed for scab within a period of four months, shall not be removed without authority in writing from an inspector, fine not less than £20 or more than £200.

Other clauses provide for the payment of persons employed

by inspectors to destroy sheep—the owner being liable by recovering the same—proceeding as the recovery of penalties. Forms of order to be given by two justices to a constable to sell sheep with regard to which convictions for scab have been obtained in the event of the fine not being paid, or if the ownership of the sheep is denied.

The provisions regarding pleuro-pneumonia are an improvement upon those hitherto proposed, at least in this country. A district is proclaimed to be clean, and no cattle from an unclean district are to be taken into it. The Governor in Council is empowered to issue proclamations declaring any part of Victoria in which the disease is not known to exist a "clean district;" and the proclamation, by defining the boundaries of the district, provides that no cattle are to be taken into the district unless certified to be free from the said disease. Diseased cattle are apparently to be kept in the unclean districts. Upon conviction before two justices the person contravening the Act is to pay a sum not exceeding twenty pounds for each and every head of cattle so taken into the district. In default of payment, imprisonment for any period not exceeding six months. The 38th clause is sufficiently stringent, and would satisfy the most zealous advocate for the killing of all suspected animals. It is as follows:—"Any justice, upon information in writing that cattle are being brought, or have lately been brought into such district, may order such cattle to be detained at, or removed to the nearest convenient place, and there securely kept until such have been inspected by a commissioner so appointed as aforesaid, and the commissioner may there examine such cattle; and if in his opinion such cattle or any of them are infected with the said disease, he may, by writing under his hand, addressed to any constable, order such infected cattle to be forthwith killed, and the carcase thereof burned or buried at the expense of the owner, or of the person in possession or charge of such cattle, and the amount of such expense may be recovered by such constable by summary proceedings before two justices."

The owner of the stock will generally consider it for his interest when the order is given by the inspector to have the cattle killed and the carcase burned or buried, as in the event of the cattle being kept for some time the expenses might exceed considerably the market value of the animals when they are sold. In Victoria the market value of fat cattle appears to be about one third of their value in this country. Prime bullocks sell in the Melbourne market at from £7 to £8 10*s.*; second quality from £5 to £6; and inferior from £2 to £3.—*North British Agriculturist.*

ROYAL COLLEGE OF VETERINARY SURGEONS.

ANNUAL MEETING.

The Twenty-first Annual Meeting of the corporate body was held on Monday, May 1st, at the offices of the College, Red Lion Square. The President (R. L. Hunt, Esq.) in the chair.

The following gentlemen were present: — Professors Spooner, Simonds, and Gamgee, and J. Wilkinson, Principal Veterinary Surgeon to the Army. Also Messrs. J. Allen, H. T. Batt, Chas. Barrow, Wm. Bland, Geo. Bollington, Jas. D. Broad, T. D. Broad, G. T. Brown, Wm. Burley, Thos. Burrell, jun., Mich. Byrne, M. F. M. Case, John Carless, H. J. Cartwright, Wm. Cawthron, Wm. Cooper, W. F. Cooper, Jas. Cowie, Chas. Dickens, E. C. Dray, J. R. Dobson, R. H. Dyer, W. B. Edmunds, Wm. Ernes, Wm. Field, jun., Wm. Giltro, W. G. Flanagan, Thos. Greaves, Jas. Hall, M. J. Harpley, Edn. Harrison, M. F. Healy, T. P. Heath, Wm. Helmore, J. B. Henderson, C. Hunting, Thos. Jex, Jno. Lawson, G. A. Lepper, C. Lowe, Dan. McLean, Peter Moir, Jas. Moon, Jas. Moore, Jas. Moore, jun., Robt. Moore, R. Mosley, Chas. Percivall, Rich. Pritchard, Wm. Pritchard, T. Rickaby, Wm. Rogers, Jas. Rose, Jas. Rowe, Alf. Rushall, Thos. Sangster, W. H. K. Shaw, F. R. Silvester, Fred. Spratt, F. T. Stanley, Ed. Stanley, Mk. Tailby, S. Tremlett, Walker Watson, J. R. Williams, Jno. Wiggins, Wm. Wilson, S. H. Withers, H. Withers, Jos. Woodger, Jos. Woodger, jun., Ed. Woodger, T. W. Wragg, and Secretary.

The Secretary, *Mr. Coates*, read the advertisement convening the meeting, and also the minutes of the previous General Meeting, which were duly confirmed.

The President, in opening the proceedings, said he congratulated himself, and the council, on the large meeting of practitioners assembled on that occasion. He saw around him the faces of many persons representing a large portion of England and of Scotland. An abstract of the proceedings of the Council would be read by the Secretary. It was not very full of interest, because no novel events had occurred during the year. The council having rendered an account of its stewardship to the members, would be happy to hear any remarks from them as to what had been done, or left undone. From the treasurer's report it would be seen that there was a fair balance in the hands of the bankers. The members would have to exercise the privilege of electing seven members: six in the place of those who retired by

rotation, all of whom, except Mr. Legrew, offered themselves for re-election; and one in the place of the late Mr. J. Ellis, whom they all regretted, alike as a citizen of the world and a member of the council. If there was any matter of public interest on which any gentleman desired to speak, he would have an opportunity of doing so after election. He would now call on the Secretary to read the

REPORT.

The Council has to report that at its first Meeting for the year the following gentlemen were elected as Officers of the College, viz.:—Robert Lewis Hunt, Esq., President; Messrs. W. J. Goodwin, M. J. Harpley, R. Pritchard, Edwin Harrison, W. Thacker, and W. Helmore, Vice-Presidents; and Mr. W. H. Coates, Secretary and Registrar.

The events of the year have not been attended with any very marked results; one of the most important to the profession, perhaps, has been that of the Select Committee appointed by the House of Commons to inquire into and amend the "Cattle Diseases Prevention Bill."

A Committee was appointed by the Council of the Royal College of Veterinary Surgeons to watch the proceedings relative to this Bill in Parliament, and stated that, in consequence of its having been withdrawn, they had no report to make.

The Council laments the loss it has experienced by the death of Professor Miller, who so ably filled the Chair in the Scotch division of the Court of Examiners, and always took the deepest interest in the welfare of the profession. The vacancy has been filled by the election of Professor Syme, of Edinburgh. Dr. Struthers having resigned his office as *Honorary* Secretary to the Scotch section of the Court of Examiners, was afterwards elected as acting *Secretary* to the same section by the Council.

An addition of another scholastic establishment has been made under the principal superintendence of Professor McCall, in Glasgow, who has exhibited a wise discretion and soundness of judgment in unhesitatingly affiliating his institution to the Royal College of Veterinary Surgeons.

The importance of these circumstances will be duly appreciated by the body corporate, and marked as an epoch of progress in its history.

The Council has much satisfaction in announcing that during the past year a number of gentlemen who only hold the certificate of the Highland and Agricultural Society, influenced by the experience which has clearly pointed out to

them that their position is an anomalous one, and inspired by a laudable ambition to stand on an equality with those who are members of the Royal College of Veterinary Surgeons, have expressed a determination to obtain the diploma which is sanctioned by the Royal Charter.

The Members of the Royal College will no doubt recognise in these adhesions an addition to that strength by which they may hope ere long to secure those rights and privileges which have been and are so justly desiderated.

During the year, 74 pupils have obtained the Diploma of the Royal College of Veterinary Surgeons, and were admitted Members of the body corporate.

It was deemed necessary that one of the College Bye-laws, No. 21, should be amended, which having been done, was duly sealed and entered on the Records, according to the provisions of the Charter. The alteration is as follows:

> "Each section of the Court of Examiners shall have a Chairman and a Secretary. The Chairman of each division of the Court shall be elected by and from amongst its Members. The Secretaries shall be appointed by the Council."

Since the last issue of the Register the increased number of Members admitted to the body corporate rendered it advisable that an addendum be prepared; 500 copies were ordered to be printed, and distributed gratuitously with the Register.

The editors of some of the leading newspapers and the publishers of the principal directories in London and its suburbs have had their attention drawn to certain individuals assuming the title of Veterinary Surgeon, and appending to their names M.R.C.V.S. The misstatements were in every instance duly corrected.

From the Registrar's Report twenty-four deaths have occurred during the past year; among them the Council has to regret the death of Mr. E. N. Gabriel, late Secretary of the Royal College of Veterinary Surgeons; he was associated with those who were instrumental in the obtainment of the Royal Charter, and for sixteen years enjoyed the respect and esteem of the Council. Also, recently, Mr. Richard Vines, of College Street, Camden Town, Demonstrator for a period of fourteen years under the late Professor Coleman; and Mr. John Ellis, of Liverpool, one of the most indefatigable members of their body.

The Financial Statement is annexed, the Balance in hand, after defraying the expenses of the year, being £435 18*s.* 2*d.*

By order of the Council,

Wm. Hy. Coates, *Secretary.*

E. BRABY, TREASURER, *in Account with the Council of the Royal College of Veterinary Surgeons,*

APRIL, 1865.

Dr.

1865.	£	*s.*	*d.*
Balance at Bankers, April, 1864	420	0	0
Examination Fees	543	18	0
Copies of Register	0	18	0
Interest	13	12	9
Income Tax returned	1	13	4
	£980	2	1

Cr.

1865.	£	*s.*	*d.*
Examination Fees and Expenses	231	13	11
Rent	60	0	0
Rates and Taxes	30	6	6
Allowance to E. N. Gabriel	50	0	0
Salary to Secretary	50	0	0
Insurances	4	14	3
Advertisements	9	12	1
Printing	15	12	0
Diplomas	4	2	0
Law Expenses	13	19	2
Stationery and Stamps	6	3	6
Coals, Gas, and Wood	11	19	6
House Repairs	9	17	6
Library	0	9	0
Furniture and Repairs	10	3	10
Wages	20	0	0
Petty House Expenses	15	10	8
Balance at Bankers'	435	18	2
	£980	2	1

We, the undersigned, have examined the above accounts, and have found them correct,

JAMES HALL,
JOSEPH WOODGER, } *Auditors.*

April, 1865.

On the motion of *Mr. Broad*, seconded by *Mr. Woodger*, the report was received.

Mr. Dray next moved the adoption of the Report.

Mr. Stanley seconded the motion.

Mr. Ernes said, he thought the Report was the most meagre ever presented by the Council. Not only had they done nothing (and, as a member of the Council, he was willing to take his share of the responsibility), but that they had attempted nothing. It was now twenty-one years since the charter was obtained, and it appeared to be forgotten that the very object of obtaining it was to improve the position of the profession. That object had not been accomplished, and it was now for the body corporate to take the matter into consideration. He (Mr. Ernes) hoped that they would bear it in mind, and would only elect those members who would take more interest in the subject than previous members had manifested. The profession could not make any progress so long as it was in its present anomalous position. The country was overrun with quacks of all descriptions, assuming the titles and taking away the emoluments of regular practitioners. He did not desire to interfere with them; but he thought an act of parliament should be sought, making it a misdemeanour for any persons without diplomas assuming the title of veterinary surgeon, or any other, that would lead the public to believe that they were duly qualified members. If they did not move in the matter, they would not only be doing an injury to themselves, but to the public in general, especially to the agricultural interest and the breeders of horses. He believed that this would soon be the only country in which there was no law against quackery. In Belgium, there had been during the last ten years a law forbidding any person to practise who was not a qualified member of the Institution; and he had been informed that the law worked well, that the profession was more numerous and occupied a better position than before, and that the diseases of an epizootic character were rapidly disappearing by the additional precautions taken by members of the profession. He did not see why England should be behind any other country. They were entitled to stand at the head of the veterinary profession, just as English agriculture and the English breed of horses took the lead of every other country in the world. It was recommended in the last report, that the country practitioners should apply to their respective members of parliament on the subject; but what was the use of applying when nothing was done, and nothing was (as he believed) intended to be done? He did not blame

the president, who had done all he could, but the matter rested with the members of the council. The chemists and druggists had bills before parliament, which would no doubt pass into law; and he believed, if a similar bill had been brought in by the veterinary profession, it would also receive the sanction of the legislature.

Mr. Gamgee said he concurred in what Mr. Ernes had said with regard to the meagreness of the report, but he was not disposed to take so desponding a view of matters as that gentleman had done. He had not intended to refer to subjects which were of great interest to himself, and were noticed in the report; but it was impossible to disregard the fact that, had they succeeded in the past year in obtaining some measure whereby the traffic in diseased cattle could have been overlooked, the veterinary surgeons throughout the country would have been recognised in certain positions of great importance to them all. He for one hoped that before long they would have legislation upon the subject; and he would work no less actively than he had done, in order to secure the employment of veterinary practitioners in the mitigation of suffering amongst animals throughout the United Kingdom. He did not think, with Mr. Ernes, that they were in a position successfully to carry through a bill such as they desired. If Mr. Ernes were King, Lords, and Commons combined, he had no doubt they might soon get their bill, but there appeared to be a great aversion on the part of the government and the country at large to affording exclusive privileges to a profession. As it was, they possessed by the charter certain exclusive titles which were of some importance, and he was happy to know that the combination so anxiously desired of the whole profession under the banner of the Royal College of Veterinary Surgeons was rapidly approaching completion. They had now more members than ever holding the certificate of the Highland and Agricultural Society. Many gentlemen had been in practice, and found that that certificate was not of service to them, and they were compelled to get the only legal and proper diploma in the United Kingdom. That result had not been obtained by measures of conciliation so much as by measures which had sprung up in the course of time under the necessities of the period. There were now no fewer than three colleges in Scotland. The students in two of them presented themselves for the proper diploma, and now the students of the old college had learned that the possession of the Highland Society's certificate was of but little value. Only ten persons had gone out during the last year, who

had not tried for the diploma of the Royal College of Veterinary Surgeons. That was a very satisfactory result, and he believed that if they all worked together with the view of showing that the holders of the Highland Society's certificates would be cordially met by them, and received into the professional body, still more of them would be disposed to enter, and the body that was represented in reality by only one school in the north, would gradually dwindle down and become exterminated in the course of time. He could not sit down without referring to what might, perhaps, be done for their improvement, and as a substitution for that which Mr. Ernes so anxiously desired. It was his opinion, that the only way in which they could now satisfactorily act in improving the position of the profession was by raising its educational standard. The Royal College of Veterinary Surgeons had no influence whatever beyond instituting examinations, and although it would be impossible to go to Parliament with success with a bill for exclusive privileges, it would not be impossible for them to go to the Home Office, and ask for a supplementary charter for the purpose of granting fellowships, such as were granted by the Colleges of Surgeons and Physicians. He believed great advantages would be derived from a system of granting fellowship diplomas to young men who had obtained membership diplomas, and then pursued their studies in the country or at college, and, having attained a certain position and a certain age, were able to pass a more rigid examination. The formation of such a body of fellows, beginning with members of the past and present council, would, he believed, tend largely to improve the position of the profession. Many young men now left college, and having no further educational object in view, neglected their studies; but the adoption of a system of fellowship diplomas would prove a valuable stimulus in their educational career. This was a mere crude suggestion, requiring mature consideration and elaboration. He thought they had great reason to congratulate themselves on the progress already made in the combination of the profession under one head.

Mr. Wilkinson said that Mr. Ernes had in his remarks thrown the greatest blame upon the council. He (Mr. Wilkinson) did not think that there was a member of the council who did not desire as earnestly as Mr. Ernes progress in the direction to which he pointed; but there were many members of the council who, like himself, objected, without seeing their way clearly, to exhausting the funds of the college in applying to Parliament for the advantages they all

desired. The council was of course impotent without the support of the body corporate; and last year the members of the college generally were in the report invited to apply to the different members of Parliament for whom they voted, and ascertain their feelings towards the veterinary profession with regard to its obtaining privileges or immunities in order to defend it from the prevailing empiricism, which, like parasites, ate away their patrimony, if not their vitals (laughter). If they went to the House of Commons without having previously canvassed many of the individual members, and obtained promises of support, he was afraid they would fail. The council had not lost sight of the subject, but it could not act without the co-operation of the members at large. He believed the secretary would bear him out in saying that although the members were requested to ascertain the feelings of the different members of Parliament, and to communicate the results to the council, not a single communication on the subject had been received. The inference naturally was that gentlemen had not communicated with their members as requested. He should not be blamed for renewing the suggestion. The time was approaching when a good opportunity would be afforded, and if they exerted themselves they might perhaps be able to carry such a bill as they had already presented, if not one still more stringent.

Professor Spooner.—We are entering upon the twenty-first year of our existence as a corporate body—I believe the twenty-second year. Having attained the age which, as applied to individuals, is regarded as the age of manhood, we naturally look back to the time when the Charter was granted; and viewing the intermediate period, we ask ourselves what has been the effect produced upon our body through the agency of the Charter of Incorporation? and I must say, that if we take such a retrospect we can come to no other conclusion than that the corporation has not effected those results to our profession as a body which we had a right to anticipate. I am prepared to endorse all that Mr. Ernes has said with reference to the progress we have made, but I am also inclined to agree with what Mr. Wilkinson has said, that the fault does not lie with the council, but more with the body at large. Let me read to you one clause in our Charter: "We do further declare and grant that the veterinary art, as practised by the said members of the body corporate, shall be henceforth taken to be, and recognised as, a profession; and that the members of the said body corporate, solely and exclusively of all other persons whomsoever, shall be deemed, taken, and recognised to be members of the said profession,

or professors of the said art, and shall be individually known and distinguished by the name or title of veterinary surgeons." Such a document as that being placed in the hands of any member of our profession, he would necessarily infer that he was entitled to the exclusive right of being designated a veterinary surgeon, and a member of the corporation. It is a fact, however, that we have no means of enforcing this as a law, and we know that there are hundreds of men practising in this country at the present time falsely assuming the title of veterinary surgeons, and some of them venturing to add to that title the letters M.R.C.V.S. There is no punishment to be inflicted upon such persons except that of exposure. Now, inasmuch as we have no legal power to prevent other individuals assuming our title, surely on the face of such a document as our Charter, if we were to go to Parliament and ask them for a bill granting us the exclusive privilege to designate ourselves veterinary surgeons and members of the corporation, and making it a misdemeanour on the part of others to assume that title, we should not be denied. But we have asked for more than Parliament is prepared to give at present. We know that the day is gone by when privileges were granted to bodies in the nature of exemption from attendance on parochial duties, and so on. I would say with Mr. Ernes, leave the men who are practising without diplomas to themselves, but do not allow them to call themselves veterinary surgeons and members of the college. I would strenuously urge the members of the profession generally to put themselves in communication with the various members of Parliament for the counties and boroughs in which they may reside, and to give the council every possible assistance in obtaining the desired end. And I would urge the members of the council to exert themselves in order as speedily as possible to bring a bill into Parliament for one simple object—that we only who are members of the corporate body may be permitted to call ourselves veterinary surgeons. That would be placing the title in a light wherein it would be viewed by the public at large as implying that the man who possessed it was a man of some education and scientific attainments. But inasmuch as persons in the present day assumed that title who have received no education at all, we are all thrown into the same category, and with a millstone hanging round our neck, are kept down in the lower grades of society. With regard to that portion of the report relating to the inquiry on the subject of the Cattle Diseases Bill, I am sorry that the committee appointed by the council to watch the proceedings

have not returned something like a report, because, although the bill was thrown out, the inquiry was a most interesting one, and every member of the profession ought to be put in possession of the proceedings. If the gentlemen present are not already in possession of the report of the proceedings, I advise them by all means to get a copy, which they can obtain at Hansard's. The evidence given before the committee was of the greatest importance, and I doubt not that it will tend very materially to impart information to the members of the profession, which will be much to their advantage. With reference to the report in other respects I have no remark to make. I have thought it my duty to place these remarks before you, and more especially to call your attention to the importance to be attached to whatever efforts we may be able to make towards the obtainment of a bill to enable us exclusively to assume the title of veterinary surgeon.

Mr. Helmore said he was surprised at Mr. Ernes coming year after year and complaining how little had been done, he himself holding a place in the council. Every member of the council was as desirous as Mr. Ernes himself to obtain the exclusive privileges to which reference had been made. He knew no member of the council who was better fitted to carry out that object than Mr. Ernes, if he would only put himself to the work.

Mr. Ernes.—Permit me to say, that there is no member who has worked more than I have in that respect.

Mr. Helmore said he was willing to give Mr. Ernes all the credit due to him, and he believed the council would be always ready to work with him in any endeavours that he might make towards accomplishing the desired object. He agreed with Mr. Spooner in thinking that their great object should be to obtain the exclusive privilege of assuming the title of veterinary surgeon. He believed that there were many persons belonging to the profession, and occupying a good position in society, who did not possess the diploma of the college, and some of them he esteemed as highly as he did many of the members of the body corporate. He did not doubt that in time the college would attain the desired end. They should remember that the College of Surgeons was for centuries a corporate body before it attained the privilege it now possessed. Only a few years since he might have styled himself, "Mr. Helmore, Surgeon," or, "Dr. Helmore," with impunity. The only privileged body was the Apothecaries Society. They could not too earnestly take the matter into their consideration. He hoped that

members of the profession in the country would not fail to apply to the members of Parliament at the approaching election. He hoped, also, that every effort would be made to raise the standard of education. They ought to congratulate themselves upon the addition of another school in the country. He hoped that not only those who were strictly members of the profession, but others who did not belong to the body corporate (many of whom were in favour of examination by the Board of Examiners), would unite in endeavouring to obtain the object they all so much desired.

The *President* said that the body corporate had nothing to do with education, except in reference to the examinations. With regard to the bill before Parliament, he must say that Mr. Ernes had devoted much time and attention to it. He was chairman of the Parliamentary Committee, and whenever there was anything to be done in reference to Parliamentary duties, Mr. Ernes was always most forward to do it. Mr. Spooner had alluded to the members of the profession being dragged down to the lower grades of society by those who improperly used their titles. No doubt there were men who, partly by their own tendencies and partly by the circumstances alluded to, were so degraded; but no legislation would ever make men gentlemen. Whatever privileges they might obtain, it was only by their own individual exertions, their education and their conduct in after life, that they could be respected and esteemed in society.

The motion for the adoption of the report was unanimously agreed to.

The election of seven members of council was then proceeded with. The following gentlemen were proposed:

Mr. Harpley, by Professor Simonds.
" Harrison, by Mr. Lawson.
" Thacker, by Mr. Wilkinson.
" Hunting, by Mr. Dray.
" Burley, by Mr. Greaves.
" Helmore, by Mr. Gamgee.
" Ernes, by Mr. Jex.
" T. D. Broad, by Mr. Silvester.
" Withers, by Mr. Harpley.
" E. C. Dray, by Professor Spooner.
" Pritchard, by Mr. Burley.
" J. Broad, by Mr. Lowe.
" W. Mavor, by Professor Spooner.
" J. Moore, by Professor Brown.

A ballot having been taken, the scrutineers (Mr. W.

Pritchard and Mr. C. Percival) presented the following report of the numbers:

Mr. Ernes	53	Mr. Burley	28
„ Harpley	45	„ Dray	25
„ T. D. Broad	43	„ J. C. Broad	24
„ Mavor	41	„ Thacker	23
„ Pritchard	40	„ Moore	7
„ Harrison	37	„ Helmore	4
„ Withers	32	„ Stanley	3
„ Hunting	28		

The election was declared to fall on Messrs. Ernes, Mr. Harpley, Mr. T. D. Broad, Mr. Mavor, Mr. Pritchard, Mr. Harrison, and Mr. Withers. It was decided by ballot that Mr. Broad should take the place of Mr. Ellis, deceased.

On the motion of Mr. Dray, seconded by Mr. Bland, a vote of thanks was unanimously accorded to the President, with whose acknowledgment of the same the proceedings terminated.

WEST OF SCOTLAND VETERINARY ASSOCIATION.

OFFICIAL REPORT.

The Quarterly Meeting of the West of Scotland Veterinary Association, was held in the Glasgow Institution Rooms, on 28th of March. Mr. Cockburn, president, in the chair.

The minutes of the former meeting were read and approved of.

A new member was admitted.

Several important cases of disease which had occurred in the practice of the members since the last meeting were narrated, and various opinions expressed by the senior members as to the remedies which ought to be adopted for their recovery

Gentlemen,—On entering upon my duties as your president I have to thank you for the honour you have conferred on me in again electing me to preside over you. Before proceeding with the business of the meeting, allow me to direct your attention to the increasing importance attached to Veterinary Medical Associations, and to the necessity of more ardent individual exertion on our parts to maintain a position amongst the many that are now instituted, with the prospect of their being rapidly increased. The West of Scotland being the first association that was instituted, it behoves us to exert ourselves, endeavouring to sustain a title for our precedence. The interest manifested in the formation of associations throughout the country is an evidence of the desire to unite more

closely the members of the profession into one great alliance, bound together by one common tie for the advancement of our profession. Those associations are, indeed, creating an era in the history of veterinary medicine and will be the palladium of our rights and privileges, by aiding the office-bearers of the Royal College of Veterinary Surgeons in the obtainment of our rights, and protection of our privileges. Let me, therefore, impress on you the necessity of being up and doing, and bear our share in the great work. I confess that I have not been so regular in my attendance at your meetings as I ought to have been: I cannot therefore solicit your more regular attendance with that importunity I otherwise might have done; however, gentlemen, for the sake of the cause I advocate, may I beg of you to give as regular attendance at our meetings as circumstances will permit, and let us earnestly and energetically devote ourselves to the task of diffusing our practical experience, the primary object of our meetings. I should like much if every member would give his opinion on the subject before the meeting, however short the remarks may be, as it is by the concentration of opinions grounded on practical experience that establish facts.

Mr. Robb then read his paper on "Tetanus."

The reading of the paper was followed by an interesting and animated discussion, on the conclusion of which the president remarked:

Mr. Robb has deservedly earned the thanks of the meeting for the concise and lucid manner he has detailed the nature, the causes, and treatment of the disease he has selected for discussion. Although there are several distinctly marked divisions of tetanus in the human subject, as far as my observation extends, we have no such divisions in our patients, the whole muscular system being involved in a greater or lesser degree in the lower animals. Looking upon this disease as being a highly increased action of the motor division of the nervous system, causing entonic spasm of muscular fibre arising from an abnormal state of the spinal chord; perfect quietude, and the use of powerful sedatives, is the most rational and scientific mode of treatment. As was the general practice in my earlier years, antiphlogistic treatment was carried to its fullest extent, bleeding, physicing, and blistering being pertinaciously persevered with, but with most unfortunate results. During my pupilage at college the mode of treatment adopted there was isolation, perfect quietude, with twenty grains of Croton Farina, given daily in a mash, were the only means adopted, and that with much success. I afterwards found, however, a difficulty in getting my patient to take the medicated mash, and becoming impatient, tried too many remedies, and was again as unsuccessful. Many years ago, like some others, I began the use of Extract of Belladonna, and the more experience I have had with this medicine the more does it establish its efficacy in this disease. There are some very acute cases that run their course so rapidly that treatment seems to be of no avail, but with judicious treatment in the great majority of cases we may save, at least, seventy per cent. of our tetanic patients.

My mode of treatment for many years, has been the removal of my patient to a quiet, loose box, enjoining perfect quietude, and commencing with from one to two drachms of Extr. Belladonna three times a day, according to the emergency of the symptoms, giving the medicine in a mash of boiled turnips and bran, which a horse generally eats with avidity, and administering an enema twice daily of a drachm of Hydrocyanic Acid, in a small quantity of tepid water, which is usually long retained, using likewise a tobacco enema once daily, either an infusion or smoke. So soon as I find my patient becoming so rigid that there may be a danger of his falling, I have him put into slings, but do not confine him too much, being merely for the purpose of keeping him on his legs. When the disease is reaching its climax, the power of mastication and deglutition is at times entirely gone for several days; I then persevere assiduously in rubbing into the skin of the neck, axilla, and inside of thighs, a watery solution of the belladonna, with more frequent repetition of the enemas: under this mode of treatment I have been very successful, although, perhaps, the recovery may not be so rapid as under other modes of treatment, finding that it takes about twenty-one days before the disease reaches its climax, and about the same period until the animal can be taken out of the slings with safety.

THE YORKSHIRE VETERINARY MEDICAL SOCIETY.

The above society held its quarterly meeting at the Church Institution Wakefield, on April 27th ult.

Present:—The President, Mr. Dray, in the chair; Mr. Naylor, Wakefield, Mr. McTaggart, Halifax, Vice-Presidents; Mr. Williams, Bradford, Hon. Sec.; Messrs. Greaves, Manchester; Howell, Rochdale; Morgan, Liverpool; Hon. Sec., Liverpool V.M.A.; Carter, Bradford; Freeman, Hull; Freeman, Keyingham; G. Smith, Darnton; Schofield, Pontefract; Nicholson, Homersley; Brown, South Hiendley; Fallding, Wakefield; Anderton, Skipton; and Horne, Barnsley.

After the preliminary business and the election of two new members were concluded, the discussion of the Secretary's essay on "Counter-irritation," read at the annual meeting at Leeds, was entered upon. Mr. Greaves, in opening the discussion, said:

Mr. President and Gentlemen,—I assure you it affords me great pleasure to offer my mead of praise to our worthy secretary for the very able paper he has so kindly favoured us with. I, like him, was taught that counter-irritation was necessary to overcome internal inflammation; these impressions were confirmed at college,

and we all know how difficult a thing it is to eradicate early prejudices; but the result of constant experience and close observation for a period of over thirty years in an extensive practice, not less than 800 to 900 of the largest and best heavy draught horses in the city of Manchester, has not only tended to modify my early impressions, but has completely changed my views on the question of counter-irritation as applied to my patients, and the result of this change of treatment is attended with much greater success.

There are some circumstances in which I hold it to be an excellent practice to employ some external remedy, such for instance as, *Setons*, inserted underneath the larynx, for coughs. I insert scores of them every six months with the very best effects, and the horse keeps at work; the beneficial effect of setons, I look upon it not so much as a counter-irritation as an issue, the constant drain of noxious matter, or unhealthy humour, the formation of pus from the colourless corpuscles direct from the parts which are at the time in an unhealthy and irritable state—this constant drain or discharge no doubt tends to unload or remove all deposit or abnormal thickening in the membrane; it is a new outlet for unhealthy action, or diseased secretions.

Firing.—Firing, in great numbers of instances, such as for spavins, curbs, splints, or for chronic affections of the bursa about the fetlock joints, I look upon as the most valuable and efficient remedy we have at our command. The beauty of firing is, that we can create intense inflammation, and concentrate it on a given space; but even this I do not look upon as acting on the principle of a counter-irritant, but rather upon the principle of an additional irritant. I have recourse to it, not with a view to divide or overbalance existing internal inflammation, but to intensify it; in most cases it alters the conditions and facilitates healthy circulation. Consolidating by the process of absorption in the diseased parts, it also always leaves a thickened corrugated skin, which I am disposed to believe tends permanently to support and strengthen the parts.

Counter-irritation.—In respect to the employment of external applications for internal organic diseases, my experience has taught me two things: the first is, that whatever nature does she does it freely and spontaneously; the second thing is, that she will admit of no arbitrary coercive interference in her wisely and well-defined course of procedure. No man in this room has a stronger or more decided opinion than I have as to the beneficial effects of certain external applications, under certain circumstances; but at the same time no man has a greater aversion, or holds in greater abhorrence, the fearful and irremediable mischief which can be produced by severe counter-irritation during acute internal disease. I maintain that, at the outset of a disease, especially if it partakes of a subacute character, much benefit may be derived from a moderate application of a mustard liniment to the sides and breast, and this followed in twelve or twenty-four hours by a large horse-rug wrung out of half-scalding water, and made to envelop the thorax. I

advocate this in the light of a diffusible stimulant, to arouse the dormant energies of the nervous system; but if we exceed this effect, depend upon it we are doing incalculable harm to our patient. We must not forget that the skin is a network of nervous filaments, and the action of any application which creates intense pain over a great expanse of surface, seems to seize hold of these textures with a pertinacious, merciless grip, inflicting excruciating suffering, which I characterise as cruel, vicious, and barbarous. It is simply absurd to suppose that we can divert the current of circulation in sufficient quantities to affect the lungs or pleura, but what we do is this, we create an additional or supplemental inflammation; we create a conflict through the medium of the nervous system; we impart into the system an antagonistic element which is hostile to nature and is inimical to recovery; it seems to intensely arouse the vascular and other systems in the body; the severe agitation in the nervous system excites the heart's action, and instead of extinguishing we are stirring the ignited embers; driving the blood with redoubled fury through the very tissues which are suffering from disease. Yes, this leaping torrent in the roaring loom of life is driven with violent impetuosity, which is next to impossible ever again to allay, and often nature sinks exhausted, slaughtered; but we will suppose she manages to ride out the storm: the delicate structures suffering from disease have had such violence done to them, and been aggravated and ravaged to such an extent, that now, even when the general excitement has passed away, these tissues are so much shattered and damaged as to be permanently affected, almost of a certainty producing vomica, effusion, &c. &c. It has often occurred to me, that severe counter-irritation in such cases may be likened to a rebellion going on in the heart of a country, and you bring a foreign army to put it down; a fierce conflict is made to rage between these combatants, both armies preying upon and sapping the resources of that country, which is soon exhausted and ruined; or it may be likened to the caricature which a lamented, and who was one of England's wisest statesmen, made in reference to protection; he likened protection to the sparrow-hawk protecting his victim with his wings, while he picked his bones with his beak.

I think it will not be gainsayed that a change of type of disease has taken place, not only in our patients, but also in man, during the last twenty or thirty years; that neither patient can tolerate the antiphlogistic or depletive treatment now, as they did then. It follows, that one of the great and grand questions for the practitioner to solve now, and which requires, nay demands, the exercise of our best abilities, is to ascertain exactly the point at which nature will no longer allow us to lead her, and where she point-blank refuses to be driven. I have had hundreds of instances of proof upon proof, in cases of gross plethoric cart-horses coming in from work loathing all food, blowing fit to drop, pulse 80 or 92 in the minute; if moved, they evince a short sigh, or sore grunt; but instead of bleeding, or mustarding, or applying severe counter-irritation with blister, which would ensure a continuance, if not

intensify these alarming symptoms, what do I do? I sometimes give a diffusible stimulant, but the next point I never, under any circumstance, omit, *viz.* to tie his head to the open door, cloth him well up, and give him cold water to drink, not tepid water, nor water with nitrate of potass dissolved in it, both are sickly and insipid; but cold, pure, fresh, sparkling water, one quart at a time, every hour, or every half hour; this is the beverage nature yearns for when she is suffering from fever; the mouths of every pore, and every follicle-gland in the mucous membrane of the tongue and mouth, are gaping wide to receive it; this pure, limpid, cooling fluid quenches thirst and fever simultaneously; this sparkling cold water in the animal machine may be likened to a little oil in the joints of a delicate, intricate engine, its lubricating effects enabling it to move with beautiful ease, smoothness, and efficiency; it is unknown the multiplicity of pacifying agencies which are set to work by it, and what conciliatory resources are called into use by the proper employment of these two best and finest of all sedative agents; their action is the very antipodes of counter-irritation; in twelve or twenty-four hours I will warrant his pulse is reduced 20 per minute, his breathing tranquil, and in two or three days he is at work again! I ask you to remember that this is not untried theory, but proved experience, which does not end in failure; the dictates of our instinct enforces the fact upon us, that the safety of the suffering organ depends upon quiescence; yes, take my word for it, if we will only give nature fair play, she can repair damages better than we can; she can do it in less time, and do it, too, more effectually.

Again, I contend, that the untenable principle of this practice is proved by the fact that neither setons, rowels, nor blisters will act at the time we want them most; they cannot be made available whilst the internal inflammation is at its height, or in the acute stage; I mean in the character of a counter-irritant, they can only be got to act when the crisis is over, when a favorable change has actually taken place, and when we could do very well without them.

I verily believe as science advances, and enlightened views prevail, we shall find that not only will vesication and venesection be discarded, but all other practices which tend to coerce or thwart nature's laws, will be viewed with reprehension and aversion.

Messrs. Howell, Naylor, Morgan, Freeman, sen., and McTaggart, spoke in support of the views held by the essayist.

Messrs. Carter, Brown, G. Smith, and Nicholson, in support of the use of counter-irritation in active inflammation. Messrs. Brown and Smith were of opinion that in active congestions it was of immense service, and in the early stages of inflammation. Mr. Carter spoke in support of its modified application in the early stages, and Mr. Nicholson thought that in the second stage of inflammation, only, should blister be employed.

In concluding the discussion the *President* remarked—I think the essayist's definition appears to be more correct, describing it as a term to designate any irritation artificially established, with a view to diminish, counteract some other irritation or inflammation existing in the body. Nevertheless, I consider Mr. Williams has taken rather too limited a view of counter-irritation, confining himself to that form produced by the application of a blister, disregarding the milder, as well as the more severe forms of counter-irritants, each of which is employed for special purposes. Mr. Williams's theory of the action of blisters can scarcely be sustained: would not all the deep-seated organs be affected alike, connected as they are so intimately with one another through the sympathetic system of nerves? The good which blisters effect may be produced according to circumstances, through their derivative power, or their power of producing absorption; their action is too immediate and direct to be brought about through the nervous system. I agree with the author of the essay, that an inflammation when once established cannot be cut short, and *ergo* all curative measures should be directed to bring it to a favorable termination, and assist nature in the carrying out of its different stages; still I cannot entirely support Mr. Williams's theory of the action of blisters in phlebitis. That counter-irritation may help, when properly applied, to modify a severe inflammatory action, is true, but all the conditions Mr. Williams describes will be brought about by nature herself in an ordinary attack of inflammation of a vein, without either blistering or any other form of counter-irritation. What Mr. Williams points out is simply the natural product of inflammatory action. As the term abscess implies necessarily a collection of pus of whatever quality, I cannot see what is wanted with a blister to produce what is already formed, and to blister an *indolent abscess* does not appear to me to be sound in principle, as by so doing an already enfeebled constitution (as evidencing the character of the abscess), is subjected to extraordinary and perhaps dangerous excitement. The patient should be supported by tonics, and other suitable constitutional treatment. Since the reading of the essay at our annual meeting, I have given the subject great consideration, and I think we must confess that we all err in using powerful counter-irritants indiscriminately. I have since tried milder counter-irritation with most beneficial results.

The more we banish our methods of diagnosis from the ranks of mental theory, and diminish them to plain indisputable evidence, the more exact and fixed will be the treatment we shall devote to the removal of disease. The general attention of all recent observers has been to advance this department of our science. It has been done to so great an extent, that representations have been made that the healing of disease has come to be regarded by the veterinary surgeon as of less moment than its recognition. Undoubtedly the two ought not to be separated, and I am of opinion it would be a difficult task to say, they have done so more than captious disputants seem inclined to admit. But whatever view we take on the

subject, we shall certainly coincide, that, before we apply our means of reparation, we must know the enemy we have to contend with. Disease being an aberration from those healthy states of function of the tissues (which we know by a scientific and practical knowledge of our profession), we cannot decide on the mode by which the morbid condition shall be eradicated, unless we are convinced what function, or what tissue is involved. We are compelled by the state of science to contend with one or two specific remedies, that is, remedies whose action we can reduce to no simpler proposition than the statement, they cure certain diseases. But even then we must be confident at the first we have the special disease to deal with, and for which we know the remedy; but how that remedy operates is open to future disquisition. "*Counter-irritation*" is a term sufficiently good, and its use need not imply that two inflammations cannot exist at one and the same time.

Mr. Williams briefly replied, thanking the members for the very great courtesy they had shown him, in giving his views so much of their serious consideration.

Mr. Naylor, after some preliminary remarks, made the following proposition: "That it is the opinion of this meeting, that the Royal College of Veterinary Surgeons ought to extend the time pupils are required to attend the Veterinary Schools, at least one year; that the whole curriculum should be improved, and that all pupils before admission should obtain at least a third class Oxford or Cambridge certificate."

Mr. Williams suggested that Mr. Naylor should add to the proposition "or some equivalent degree," to which Mr. Naylor consented.

Mr. Smith then seconded the resolution, when an animated discussion arose, and ultimately the motion was rejected.

The next meeting of the society will be held at Harrogate, in July, when Mr. Greaves will read his paper on "Influenza."

W. Williams, Bradford,
Hon. Secretary.

NORTH OF ENGLAND VETERINARY MEDICAL ASSOCIATION.

OFFICIAL REPORT.

The Sixth Quarterly Meeting of this Association was held at the Rose and Crown Hotel, Durham, on Thursday, the 11th of May. A majority of the members were present.

The president, Mr. Hunting, occupied the chair.

Among other things, it was decided that, in future, the meetings be held at one o'clock, instead of four, as heretofore, as thereby greater facilities would be afforded to the members for reaching their respective homes.

Six new members were enrolled, viz.: Mr. Matthew Hedley, Darlington; Thos. Plews, Stockton-on-Tees; Wm. Hunting, South Hetton; G. Hain, Newcastle; Wm. Allison, Thornley; Wm. Hardy, Darlington.

On the disposal of the preliminary business of the society Mr. Farrow, M.R.C.V.S., Durham, complied with the call of the president, and brought forward the following paper on "Parturition."

Mr. President and Gentlemen,—I have been requested by the worthy Secretary of this association, to bring forward, at this meeting, a subject for the consideration of the members, and have consented so to do, not, however, with a belief that I could adduce anything new or interesting. I hope, however, that which I shall bring before you will lead to a free discussion, and cause many points of practical utility to be made more generally known.

The subject of "Parturition" is one which, in my opinion, has been too much neglected both by writers and most teachers of veterinary medicine. I have no doubt you will all agree, that it is one worthy of our consideration,—one, indeed, of great importance both to ourselves and to our employers.

It is not to ordinary cases of parturition that we are called to attend, but to difficult and extraordinary ones—cases that have proved utterly beyond the power of farmers and others to give relief in. Under such circumstances we have to contend against considerable disadvantage, and we require therefore to possess great confidence, with a perfect knowledge of the subject, so as to enable us to deal properly with the case. This should be done promptly, as in all probability the time which would have proved the mos valuable in effecting a removal of the difficulties of the case will have past away.

Confidence and knowledge are best acquired by practice; yet by discussion, the best methods to afford relief may be brought forward, and a great amount of information gained thereby—each member adding a something to the general stock. This, I presume, will be one advantage we shall derive on this occasion.

My remarks will be purely practical; drawn, indeed, from no other source than long experience in such cases; hence I feel less hesitation in addressing practical men than I should do those not conversant with the subject. Many of you, I am aware, must have had similar difficulties to contend with which have fallen so frequently to my lot.

I have said that we are not called upon to attend *ordinary* cases of parturition, yet I am confident from long experience, that many valuable animals and their offspring would be saved if we were consulted at the commencement of labour, in place of being sent for so often at too late a period.

There are five classes of animals, in particular, that require our assistance, viz., the mare, cow, ewe, sow, and bitch. To all of these I have often been called in protracted and difficult cases of labour; but I shall not, in this short paper, attempt to extend my remarks beyond the first two, or principal animals.

The process of labour in all animals is attended with anxiety and pain; yet they suffer considerably less than the human female, owing to the formation of the parts connected with the transit of the fœtus; the horizontal position of the pelvis not requiring that peculiarity of form which is so necessary to guard against abortion in the human female. Although animals suffer less, yet there is in all of them a marked anxiety and restlessness at the time, and as the labour advances considerable and acute pain which only ceases with the expulsion of the fœtus.

In the mare, labour is a most rapid operation. Her throes also are often most powerful, being frequently attended with extreme perspiration, and in many cases, also with great exhaustion.

In the cow these extreme propulsive efforts are not so well-marked, and her labour is slower and more protracted. She, however, more frequently requires assistance than the mare, and will bear up longer under disadvantageous circumstances.

What then, it may be asked, are the general causes of difficult parturition in the cow, and occasionally occurring also in the mare? They are various.

First. From a want of that natural preparation of the parts through which the fœtus has to pass in its exit from the uterus.

Secondly. From a want of muscular power in the uterus to press forward its contents, arising in consequence of over distension from unnatural fluid accumulations within the organ.

Thirdly. From morbid enlargement of the fœtus, either from unusual growth, dropsical states, or decomposition, when it has been dead some time before the process of expulsion is commenced.

Fourthly. From unnatural presentation of parts, whereby the fœtus cannot pass through the pelvis and external parts.

When the period has arrived for the completion of parturition, nature, in ordinary cases, prepares the way by a relaxation of the parts; and when the pains of labour commence, the mouth of the uterus also opens to allow a free passage from within.

In some cases, this part remains undilated for some days, and generally causes considerable uneasiness on the part of the owner, who often attempts, or wishes to have the parts forced by an operation. This should never be done so long as the labour-pains continue. If they cease, or no improvement takes place, then we are justified in assisting the dilatation with the hand; but by no means with the knife.

Another cause of difficulty occurs from a banded state of the neck of the uterus, and is generally a very difficult one to overcome.

The muscular structure of the neck of the uterus feels like a band, or thick partition stretching across one side, without any tendency to relax or give way. Such a condition can only be overcome by considerable patience, and continued pressure on the parts.

Cases do occur, where there is no dilatation or opening of the os uteri at the natural period, and the fœtus is not expelled for months after. I have met with many cases of this kind in the cow, but never in the mare.

In the second class of difficult cases—those in which exists a want of muscular power to expel the fœtus from the presence of a large quantity of water within the coverings—delivery is most easily effected by breaking down the membranes, and allowing the fluid to pass off; the fœtus is then to be brought up, and extracted in the usual way.

The mare is not liable to this state, as far as my experience goes.

The third cause, or that which arises from extreme disproportion of the fœtus to the cavity through which it has to pass,—in some cases attaining great size from over nutrition — in others, from dropsical states of the head and abdomen—but more frequently from enlargement arising from decomposition, when it has remained some time within the uterus after life has been extinct.

In all cases of this description, if there is no reasonable probability that the fœtus can pass through the pelvis and vagina, we must reduce its size by a removal of one or both limbs to secure that end. So long, however, as life remains in the fœtus, every effort should be made to save it; but where this is doubtful, then our only duty is to save the dam if possible.

In the dropsical states, where ascertained, the exit of the fluid affords instant relief. I have had cases of this description.

Fourthly. The next causes, and most common, are those that arise from a false or unnatural presentation of the parts. They are common in both the mare and the cow, although much more frequent in the latter. The cause of this difference I am not able to account for, but it is met with in practice.

In all unnatural presentations it is requisite to replace the parts in the order as intended by nature they should pass through the pelvis. Before any attempt is made to rectify a false presentation, all protruding parts—parts that have passed into the vagina or passage—must be returned into the uterus.

In order to facilitate this operation the patient must be placed in such a position that the hind parts may be considerably raised above the fore ones. This elevation will throw the fœtus back into the cavity of the womb, and by that change of position, afford considerable assistance to the operator.

The most common form of false presentation in the mare is the fore limbs, without the head, that part being turned on the shoulder, or under the breast of the foal.

In the early stage of the labour, before the fluids have been expelled from the uterus, this deviation from the natural order can be rectified with little trouble by an experienced hand; but after that time, and when violent muscular action of the uterus is set up, it becomes no easy task to the operator.

Frequently the fore limbs must be removed before delivery can be accomplished.

The hind parts presenting with limbs under the belly is another ordinary cause of difficulty. The hind feet must be brought up before extraction can be effected. This is best accomplished by placing cords upon the legs, close to the feet, and then raising them, while the hind parts are pushed forwards.

Another cause of difficulty arises from the hind parts of the fœtus becoming fixed in the pelvis, either from being too large to pass, or from the stifle joint becoming forced into the pelvis in a contracted position. It is then necessary to force back the fœtus into the womb in order to extract it.

The treatment of the animal after difficult labour will be a stimulant in the first place, and next an opening drench. A strong embrocation of mustard and ammonia applied over the seat of the uterus, and a cooling diet, with gruel, will be the proper course to be adopted.

Having detailed a few of the principal causes of difficult parturition, I shall be glad to have the opinion of the gentlemen present, many of whom must have had quite as much experience in such cases as I have had.

A lengthened and animated discussion succeeded the reading of the paper in which most of the members took a part, resulting in the bringing together of many valuable opinions and details of experience gathered during continued practice among those animals referred to.

With regard to the greater prevalence of difficult cases of parturition in the cow as compared with the mare, it was generally believed that such were the result of the uneven volume described by the rumen, and probably also from the common practice of these animals in "rigging each other."

Mr. McGregor said he had found young Dutch and Irish cattle, after being landed here, very liable to false presentations in labour, which he attributed to the poverty and generally weak state of system, together with the motion of the vessel during sea passage.

Mr. Farrow was also inclined to the same belief, and added, that excitement consequent on a voyage would also doubtless act with power towards the same end. A flock of ewes came under his observation recently, which, having been frightened by dogs at the time of parturition, presented the lambs in every difficult form.

Twisting of the uterus was advanced by *Mr. Dudgeon,* which he believed was occasioned by rolling. The best means to obviate such a state was freely discussed—it being the opinion of those most practically conversant with such anomalies, that a restoration to a natural position would be effected by placing the animal on the ground, and rapidly moving the body in a contrary position.

Mr. Armatage drew the attention of the members to those conditions of parturition in the mare in which not only a false position of the fœtus was indicated, but there were unnatural sizes to contend with, most powerful muscular contraction of the uterus, and violent efforts on the part of the mare. Such states were, in his opinion, remarkably important and required great skill and energy.

In reply to these remarks, *Mr. W. Allison* supported Mr. Farrow, in the principle of allaying the muscular spasm by bleeding largely and administering powerful narcotics; and as a means of getting away the fœtus, considered it always more effective and

rapid to get both of the proper limbs into position, rather than attempt to speculate on a withdrawal by one limb only, even should one be in the most difficult position—under the body, for instance. If one extremity could be raised he had no doubt of raising the other also.

Mr. Hunter noticed the various forms of irregular contraction of the uterus which had come under his notice, and the inconveniences attendant upon them.

The question of removing the placenta was next freely taken up by *Mr. Allison, Mr. Dudgeon, The President, Mr. Farrow*, and others. The general opinion being, that in cattle little or no inconvenience arose from its remaining four or five days in the cow; but from the mare it should be removed, if not expelled, after the lapse of twenty-four hours. In the latter animal retention of the placenta gave rise to swelled legs and hocks, and great irritation, from absorption of the putrefying material.

Mr. Armatage adverted to numerous cases which had come before him, in which, shortly after parturition had been completed in a perfectly natural manner, the animals would strain violently.

The cause of this he had in every instance been able to trace to impaction of the third stomach, all other symptoms which accompany such a state being present. It had mostly occurred at the first or second parturition, and among well bred, and highly fed cattle. Considerable variety of opinion was expressed as to the possibility of always being able to detect the third stomach by external manipulation in the right flank, or per rectum, and the policy of relying upon such a proceeding as a means of diagnosis in these diseases.

A vote of thanks to Mr. Farrow for his paper, and the earnest manner in which he had sought to place before the meeting the results of his extensive experience in connection with cases of parturition, was moved by *Mr. Armatage*, seconded by the *President*, and carried by acclamation.

The thanks of the meeting were, as usual, warmly conveyed to the President for his services on the occasion.

The meeting was, in all respects, highly successful, and manifests the onward progress which the society is making. Mutual confidence in each other becomes more evident among the members, and the great value of such associations, rendered apparent by the assistance derived from the discussion of such subjects as that brought forward by Mr. Farrow, and other members. The benefits thus derivable are capable of being reduced and applied to the every day circumstances of each individual, which when fully considered, are calculated to make one wonder that, being easily attained, we should have been content to remain so long without embracing the principles by which they can be invariably secured.

The next meeting will be held at Newcastle-on-Tyne, during the month of July.

PARLIAMENTARY INTELLIGENCE.

Monday, May 8th.

CATTLE DISEASES.

Sir J. C. Jervoise asked the Vice-President of the Committee of Council on Education whether Her Majesty's Government intended to institute any measure with a view to obviate the loss, inconvenience, and alarm, attendant on conclusions, unsupported by demonstration, as to the so-called dangerous communicable disorders in man and beast.

Mr. Bruce said that, as the Government did not admit the accuracy of the statements in question, nor that the conclusions contained in the report were unsupported by evidence, but, on the contrary, were based on the most ample evidence, they were not prepared to institute any such measure as the honorable baronet had indicated.

Veterinary Jurisprudence.

THE LATE TRIAL FOR "ALLEGED MALPRACTICES AND NEGLECT OF PROPER MANAGEMENT OF A HORSE."

W. H. MOGG *v.* THE CIRENCESTER AGRICULTURAL COLLEGE.

[We have received the following letter from Mr. Murray, the Veterinary Professor to the Royal Agricultural College, relative to the evidence in this case. We readily give insertion to Mr. Murray's letter, believing that it may help to explain some things which did not appear so clear in the report.]

Cirencester; *May 13th*, 1865.

Gentlemen,—As a report of the action brought by Mr. Mogg against the Agricultural College has recently appeared in your Journal, and as I am concerned in that case, I will feel obliged by your inserting the following remarks in your Journal. I will not trouble you with details to a greater extent than is necessary, but in a few words I will endeavour to explain how an unexpected result was brought about. A horse of Mr. W. H. Mogg's was placed under my care on the 12th of May, 1864, for lameness in the off hind leg—the result of a sprain. The horse was properly treated, and received a sufficient degree of attention; the lameness had very

greatly diminished, and there was every prospect of its being altogether removed by a continuance of treatment, when unfortunately the horse met with an accident, which rendered him almost as lame as when he came under my care originally. The owner called on me on the 24th of June, about four days after the occurrence of the accident, the nature of which I explained to him, as also the effect which it had produced on the horse. Instead of being satisfied by my explanation, Mr. Mogg said that the abrasions and other injuries the horse had received were owing to the badness of the hay; as this was utterly untrue, not to say ridiculous, I told Mr. Mogg that if he felt dissatisfied with the feeding and treatment of his horse he ought to remove him. He threatened to bring the case into court if he did not get some money for his horse. I declined to listen to such proposals, and told him he must pay for the time the horse had been at the hospital. This was not done until the 13th of July following, on which day the horse was taken away. Between the 24th of June and the time of the horse's removal treatment was continued, so that the lameness had diminished when the horse was removed on the 13th of July. He was not so lame as when brought to me for treatment.

Now, the substance of the matter is, that while this horse was being treated he met with an accident, viz., got cast, and consequently received several slight abrasions, and the diseased structures were also injured to such an extent as greatly to retard the animal's recovery. This accident did not arise from carelessness, and there was no blame whatever attachable to me for its occurrence. If a similar accident had occurred to a horse at a livery stable, or when turned out to grass, the case would have been simple; the livery stable keeper, or the farmer, as the case may be, will not ensure an animal against accidents; and every one knows that when a horse is turned out to grass he is liable to accidents, and that he may sustain injuries even when in the stable. It might be shown that the injuries have not been sustained through the carelessness of the person on whose premises the horse is kept, yet the owner (if his notions of what honesty is are misty) might demand a sum of money; it is not very likely that he would get it, nor is it very likely that such a claim could be enforced in a court of law; but even in such a case, by bringing forward *good witnesses*, there is a probability of success.

When a horse is placed under the charge of a veterinary surgeon there is more room for quibbling. If a horse is accidentally injured while under his care an ingenious barrister may endeavour to show that the results of an accident have been produced by injudicious treatment, or, as was done in the case in which I was concerned, the barrister may try to show that *the accident was caused by the treatment*. A case is weak indeed which requires the support of such arguments. If they were addressed to a man who knew anything of such matters they would be estimated at their proper value; but when, as happened in this case, the judge knows nothing what-

ever of the habits of animals or medical treatment, the most transparent absurdities are looked on by him as convincing arguments.

The town of Cirencester is a mile distant from the hospital, and Mr. Mogg could have placed his horse under the care of a veterinary practitioner there. Instead of doing so, however, his horse, which was still lame, is walked a distance of four or five miles, and then turned out to grass. If a professional man were to give an opinion as to the state of the horse at the time of his being taken from under my care, it was surely necessary that he should examine him immediately. This hardly needs explanation. If a horse which is lame from a sprain is walked five miles, and then turned out to grass, is it likely to improve him? The horse received no treatment after leaving the hospital, but, at the request of Mr. Mogg, he was examined by Mr. Blunsom, V.S., Cirencester, two months afterwards. Mr. Blunsom said in his evidence that the horse trotted sound on the grass, that the ground was hard, and he thought the trial a sufficient one; he also said that he treated the horse, in December, for a strain of the theca of the tendons of the off hind leg. The horse was treated by Mr. Blunsom, before coming under my care, for a sprain of the same parts and in the same leg, but, strange to say, Mr. Mogg, when he brought the horse to the hospital, never mentioned this fact. The horse, then, had a sprain of the off hind leg twice, and it need hardly be said that this rendered the case more difficult of treatment. Mr. Blunsom doubtless felt difficulty in speaking of treatment which he had not seen—the moral feelings of some men prevent them from doing so. His evidence did not support a case which needed a witness who could speak confidently about that which he had never seen.

Mr. William Bryer, V.S., of Cheltenham, was brought by Mr. Mogg to give evidence. Mr. Bryer examined the horse on the 24th of October, about three and a half months having elapsed since the horse was under my care. The difficulty will occur to every one—how could Mr. Bryer know what was the state of the horse on the 11th of July, when he never saw it until the 24th of October? This difficulty is got over by taking *Mr. Mogg's description of the case*. Now, be it remembered that Mr. Mogg is an unprofessional person, and that on very important matters of fact his evidence was contradicted by other witnesses, including some called by himself. Mr. Bryer said, "I have heard the plaintiff's (Mr. Mogg's) evidence of the size of the leg when the horse left the hospital, on the 12th July, and I cannot understand how the leg could get so much swollen under proper treatment." Now, Mr. Bryer did not scruple to insinuate that my treatment was improper, and his opinion was based on Mr. Mogg's statement of the case. Did Mr. Bryer entertain such a high opinion of Mr. Mogg's knowledge and truthfulness that on his mere statement he could venture to give an opinion as to the treatment of a case which he never saw until three and a half months after it was taken from Cirencester, and during that interval the horse was not treated? Whatever opinion Mr. Bryer entertained as to Mr. Mogg's fitness to give a description of the

case, he did not hesitate to make statements founded on Mr. Mogg's description of the case. Be it remembered that Mr. Bryer had not heard any description of the case, nor of its treatment, than that given by Mr. Mogg. He had not heard a single word from me on either of these points. How does Mr. Bryer get over this difficulty? Mr. Bryer said, "I assume that there was a discharge after blistering; then blistering, again, was improper." These assumptions were incorrect; and I ask, was Mr. Bryer justified, on *mere assumptions*, to make statements damaging to my character. I think that there cannot be much difficulty in answering this question. Mr. Bryer was asked to give an opinion as to the value of Mr. Mogg's horse. Mr. Bryer said that the horse, if sound, would be worth £40 or £50. It was proved in court that Mr. Mogg could not get rid of his horse when it was sound, though he offered it for sale at £25. In the opinion of most professional men it would be thought wrong to turn a horse out to grass which was lame from a sprain; and I think every one will agree that the horse should have been examined and treated by a veterinary surgeon after leaving the hospital. Mr. Mogg did not do this; no treatment was used, no professional man was called in. Mr. Bryer helps Mr. Mogg out of this difficulty, as he says, "The turning out of the horse to grass at Mr. Bedford's was a proper course to adopt." Wherever my conduct was concerned Mr. Bryer had no difficulty in pronouncing it to be wrong; if he could not come to that conclusion on sufficient evidence, *he assumed* that my conduct was wrong. Mr. Mogg, however, in Mr. Bryer's opinion, was truthful in his statements and unerring in his judgment. Whatever he did was right. The mere fact of a horse belonging to Mr. Mogg appeared to double the value. The horse which Mr. Mogg could not sell for £25 Mr. Bryer pronounced to be worth £40 or £50. Is a veterinary surgeon justified, on the simple statements of the plaintiff in a case, *supported by assumptions*, to give an opinion in the witness-box that the medical treatment of another professional man was wrong? This is what Mr. Bryer did in the case in which I was concerned, as he never saw the horse until three and a half months after it had been treated by me, and his opinion could have no other foundation than that which I have stated.

I am, &c.,

A. J. Murray, M.R.C.V.S.

To the Editors of 'The Veterinarian.'

NEW MEMBERS OF THE PROFESSION.

STUDENTS OF THE EDINBURGH VETERINARY COLLEGE.

Mr. George Armatage . .	Pensher, by Fence Houses.
— David Dudgeon . . .	Sunderland.
— William Allen Field .	Newbury, Berks.
— Alexander Lockhart* .	Glasgow.
— Thomas McCrorie* . .	Monkton, Ayrshire.
— Robert Moore* . . .	London.
— James Green Paton* .	Manchester.
— Thomas Sharpe* . .	Hamilton, Lanarkshire.
— Robert Wilson Sloane*	Carsphairn, Kirkcudbrightshire.
— Frederick Wall* . . .	Manchester.
— David Young* . . .	Hamilton, Lanarkshire.
— George Young* . . .	Haddington.

STUDENTS OF THE NEW VETERINARY COLLEGE.

— George Bollington . .	Ashover, Chesterfield.
— William Bower . . .	Rudham, Norfolk.
— Walter Henry Bulmer.	Alford, Lincolnshire.
— Middleton F. M. Case.	Godmanchester, Hunts.
— James Connon . . .	Forgue, Aberdeenshire.
— Thomas Douglas . .	Moneylaws, Northumberland.
— Benjamin Duff . . .	Edinburgh.
— William Hunting . .	South Hetton, Durham.
— James McKenna . .	Belfast.
— John Porritt Rothwell .	Bury, Lancashire.
— William Rowe . . .	Coldstream.
— John Scott.	Auchtermuchty, Fifeshire.
— Thomas Todd . . .	Peebles.
— Thomas Wyche . . .	Wilmslow, Cheshire.

STUDENTS OF THE GLASGOW VETERINARY COLLEGE.

— Alexander Anderson .	Glasgow.
— Thomas Campbell . .	Garlieston, Wigtownshire.
— Peter Findlay . . .	Glasgow.

* These gentlemen have also obtained the Highland and Agricultural Society's certificate.

ARMY APPOINTMENTS.

War Office, Pall Mall; *May* 2.

15th Hussars.—Veterinary Surgeon John Burr, from half-pay, late Military Train, to be Veterinary Surgeon, *vice* First-class Veterinary Surgeon Martin Mence, transferred to 1st Life Guards.

May 16.

3rd Regiment of Dragoon Guards.—Veterinary Surgeon M. D. Byrne, from the Military Train, to be Veterinary Surgeon, *vice* E. T. Cheeseman, resigned.

MISCELLANEA.

DIFFERENCE BETWEEN MAN AND THE BRUTE

Professor Max Müller has made these two assertions:

1. "The science of language proves that all root words expressed 'general ideas,'—that the first, the thing named, was the 'general idea.'"

2. "Brutes have not 'general ideas;' and, therefore, we have arrived at the true distinction between man and brute—viz., the 'general idea,' and the expression of it, neither of which is possible without the other."

PETROLEUM.

The exact source of petroleum is, up to the present, uncertain; whether it has all been produced by distillation from bituminous coal, anthracite being formed at the same time, or whether it has resulted directly from the bituminous fermentation of marine plants antedating the coal, and containing a larger proportion of hydrogen. The amount thrown out by some of the wells is enormous. One of them ejected 3740 barrels a day, three 1000 barrels, one 800 barrels. To "strike ile" has become throughout that region the synonym for rapidly growing wealthy. It has entirely displaced all other means of lighting, except gas. The great desideratum is a perfect chimneyless burner.—*New York Journal of Science.*

OBITUARY.

W. M'Kenna.—Death is still busy in our ranks, removing from amongst us those who have occupied a distinguished position, and done good service to the cause of veterinary science. On the day of the publication of our last number, and also that of the holding of the annual meeting of the profession, Mr. W. M'Kenna, of Belfast, was called from off this earthly scene. The blow fell heavily upon his sorrowing friends, and was as unexpected a few days before as it was felt to be severe. Mr. M'Kenna had made arrangements for leaving Ireland on the afternoon of Friday, April 28th, so as to attend the annual meeting on Monday, May 1st, according to his general custom. His resolve, however, was not permitted to be realised. On Wednesday evening he left home to pay a professional visit at Mr. Kennedy's, about a mile from the town, and while talking to that gentleman in front of his house the horse he was riding suddenly became unmanageable at seeing another horse galloping in a field close by, and, rearing, overbalanced himself and fell, with a terrible crash, upon poor M'Kenna. He was immediately picked up and conveyed to his residence, but from the moment he received the injury he was unable to move any part of his body save his hands and arms. All that medical skill could devise was done for him, but without avail; the vital functions gradually gave way, and, congestion of lungs setting in, he died at about a quarter to ten on the night of the 1st of May. His age was fifty-eight, and his diploma bears date January 6th, 1835. A few years since he was elected one of the *Vice-Presidents* of the Royal College of Veterinary Surgeons, and, although residing in Ireland, did not hesitate to come to London to attend the Council meetings; such was his ardour in the profession of his choice.

Edward Braby.—To the preceding obituary we deeply regret to have to add that of another distinguished member of the College, *viz.*, Mr. Edward Braby, of London. Mr. Braby was well known in his connection with the Royal College of Veterinary Surgeons, having been a member of the Council for upwards of twenty years.

In 1858 he was elected Treasurer, an office which he held to the time of his death, discharging throughout its several duties with strict fidelity. From July, 1859, to March, 1860, he officiated as Hon. Secretary, in consequence of the late Secretary—Mr. E. Gabriel—being incapacitated by illness. For this he received the thanks of the Council. Again, in June, 1861, he was solicited by the Council to undertake the same duties, which he assented to, and very ably performed them up to the time of Mr. Coates being appointed as Mr. Gabriel's successor, in January, 1862. In July of this year the Council, being desirous of marking their high esteem for himself individually, and their appreciation of his gratuitous services, appointed a committee to carry their wishes into effect.

The committee recommended that a testimonial, consisting of a tea and coffee service, should be offered for his acceptance. The recommendation was adopted, and the presentation made at a special meeting of the Council. The principal piece of the service bore the following inscription:

> "Presented to Edward Braby, Esq., M.R.C.V.S., by the Council of the Royal College of Veterinary Surgeons, in acknowledgment of the gratuitous and invaluable services rendered by him as their Honorary Secretary."

Mr. Braby's diploma bears date August 6th, 1833, and shortly after entering on the active duties of the profession he was appointed veterinary surgeon to the well-known firm of Barclay, Perkins, and Co. Here he remained until removed by death, gaining for himself the entire confidence and goodwill of the firm. Besides having an intimate knowledge of his profession, Mr. Braby was well versed in mechanics. He designed several ingenious machines for the lessening of labour, and was among the early adapters of electricity to our daily requirements.

In concluding these remarks, it is not too much to say of him that he was a kind and sincere friend, a good parent, and an honest man, and, as such, was universally esteemed by all who knew him.

He died on May 15th, after rather a long illness, at the comparatively early age of fifty-two.

OBITUARY OF T. W. MOSS.

Earl Street, Blackfriars;
May 23rd, 1865.

Gentlemen,—I observe in the "Obituary" of the *Veterinarian* for May the death of Mr. T. W. Moss, M.R.C.V.S. Now, as I am the only member of the profession of that name, it is evident an error has occurred, which you will oblige me by correcting in your next number, as I am happy to say I am in good health, and hope to remain so for a long time to come. The cause of this error, I have no doubt, arose from the death of a farrier of this name, who resided in Princes Street, Stamford Street.

I am, &c.,
Frederick Wm. Moss, M.R.C.V.S.

To the Editors of the 'Veterinarian.'

[We regret the occurrence of this error, which, however, did not depend on ourselves, as the death was officially communicated to us. We cordially congratulate Mr. Moss on his present good health, and trust that he will long be spared to enjoy all the comforts of this life.—Eds.]

THE

VETERINARIAN.

VOL. XXXVIII. No. 451. JULY, 1865. Fourth Series. No. 127.

Communications and Cases.

DISEASE OF THE BRAIN AND CRANIAL BONES PRODUCED BY A CANCEROUS TUMOUR.

By Professor Varnell, Royal Veterinary College.

In the early part of this spring I was requested by Mr. Murch, M.R.C.V.S., to see a horse, then under his care, affected, as he considered, with a disease of the brain. Mr. Murch was of opinion that the case was a hopeless one; nevertheless, he expressed a wish that I should see it; partly to please the owner of the animal, and partly to satisfy himself. The brief history he gave me of the case was somewhat as follows: viz., that the horse, which was the property of a tradesman, had been used in a heavy cart to deliver goods, and that for some time previously to his being called upon to see him he had been observed to be dull, and to require some trouble to get him along, but when in the stable he fed well, and no difference was observed in his usual habits.

This symptom of dulness having gradually merged into a kind of stupor, the owner thought it desirable to have something done for the relief of the horse, and Mr. Murch was therefore requested to see him. Mr. Murch had no difficulty in declaring the case to be one of diseased brain, but the cause of the affection was by no means clear. A close examination, however, showed that the left side of the head exhibited several peculiarities, and that there was a fulness over the left eye. The application of pressure, also, to the

left frontal bone, especially to the orbital process, produced a yielding of the parts. The general symptoms which were present having increased in intensity within the last few days, convinced Mr. Murch that they were due to pressure being imparted from some peculiar cause to the brain, and that the state of the frontal bones also depended upon the same cause.

Mr. Murch had partly made up his mind to trephine the frontal sinus; but, on further consideration, he thought it best to let me see the case before so doing. He further described the treatment that had been had recourse to from the time the horse was placed under his care, which, although it proved of no avail, was, nevertheless, in my opinion, quite in accordance with the symptoms evinced.

On my arrival at the stable I was shown a strong, stout horse, in good working condition. He was standing in a stall, with his fore and hind legs placed in the position of a horse drawing a heavy load. His head was firmly pressed against the front part of the stall. He was breathing with a loud, sonorous noise, and seemed quite unconscious of surrounding objects. As far as I was enabled I examined the left side of the head—my attention having been drawn to this part by the conversation I had had with Mr. Murch—and found it in the state which he had described. The pulse, which had varied much during the short time the horse had been ill, being at first very slow, had now become quicker, and numbered nearly 100 per minute. It was also very small in volume. I saw no prospect whatever of the horse recovering, and afterwards I was informed that he died during the night succeeding my visit. Through the kindness of Mr. Murch, the head was brought to the College for my inspection.

Examination of the specimen.—I had but little difficulty in removing the antero-lateral boundary wall of the cranium; indeed some part of it had already disappeared by absorption, while that left was so very thin that it could be cut through almost as easily as a piece of paper. The inferior part of the left parietal bone, the left wings of the sphenoid and ethmoid, and the orbital plates of the frontal bone, had almost entirely disappeared. With this absorption of bones, the muscles clothing them had also become degenerated, or been removed by absorption. Having exposed the left frontal sinus and the antero-lateral part of the cranium, the cause of the cerebral disturbance became at once apparent. A large fleshy growth, which filled the whole of the frontal sinus, and the anterior part of the cranium, presented itself. This

tumour, which proved to be cancerous in its nature, had, by pressing upon the brain, caused absorption of at least one half of the anterior lobe of the left hemisphere of the cerebrum. The abnormal growth, which did not weigh less than a pound and a half, was irregular in form, and nodulated on its surface. It was also of a grayish-white colour. The cause which gave rise to this disease is unknown; but if it could be ascertained, it would probably be found that, originally, the horse had received a blow on this region of the head, and most likely on the outer and front parts of the frontal bone, to the inner surface of which the tumour was attached by a broad pedicle.

My intention in recording this case is simply to make mention of the facts relating to it, and not to offer any speculations on the pathology of cancer, nor to attempt to explain the physiological deductions that might be drawn from the functional interference of the cerebrum by the pressure of the tumour.

TUMOURS IN THE VENTRICLE OF THE BRAIN OF THE HORSE, COMPLICATED WITH ŒDEMA OF THE HEAD AND TONGUE.

By the Same.

The following case will afford much matter for physiological as well as for pathological reflection. The particulars were supplied by Mr. Hardy, M.R.C.V.S., who also sent me the morbid parts taken from the horse in question.

Mr. Hardy writes as follows:

Sleaford, *May* 15*th*, 1865.

"Dear Sir,—I am sorry I have not had an opportunity before this of forwarding you the full particulars of the case which I mentioned to you.

"The tumours now sent for your inspection were taken from the brain of a bay cart-mare, five years old, the property of Mr. Knight, of Wilsford Heath. About six months since the mare in question was frequently seen in a drowsy state. When brought into the stable, after a day's work, she would sometimes fall down suddenly, lie for a few minutes, and then get up again, apparently none the worse for the attack. The parties having the care of her attached

little or no importance to these attacks, as they considered they arose from mere drowsiness, and especially were they led to this conclusion as the mare in other respects seemed to be healthy. This state of things continued until the evening of April 8th, when she suddenly fell, and lay for twelve hours perfectly stiff and motionless; in fact, the man thought she was dead.

"On the 9th, however, he finding her still alive, my attendance was sought, but previous to my arrival the foreman had recourse to bloodletting rather copiously—a plan too frequently adopted by men of this class. I found her up, and continually walking round a large "crew yard," with her head in a dependant position, in fact, nearly touching the ground. She appeared to be perfectly blind, and would sometimes run against the wall, or any obstacle in her way. The tongue was protruding, the pulse scarcely perceptible, and the breathing slightly accelerated, but the alvine and urinary evacuations seemed to be normal. Considering the case to be one of disease of the brain, the precise nature of which it was difficult to determine, I ordered her to be placed in a roomy loose shed, had the body well clothed, and applied fomentations to the head. Instructions were given to keep her perfectly quiet. As for medicine, it was impossible to administer any.

"10th, 9 a.m.—The mare still paces round the box, and always on the off side, and if attempts are made to impede her progress she plunges violently. Her head is much swollen, and the tongue still more protruded and enlarged. The breathing is much accelerated, which no doubt arises from pressure upon the upper part of the respiratory organs.

"I scarified the parts, and gave exit to a small quantity of serous fluid. I also continued the fomentations.

"6 p.m.—The symptoms are increasing in severity.

"11th.—Mare much worse; head and tongue more swollen. She still wanders round her box. The breathing is laborious, and the pulse scarcely perceptible.

"I informed the owner—it being the first time I had seen him—of the impossibility of the mare's recovery, and advised him to have her destroyed. To this he consented, and she was immediately killed. Being anxious to know the cause of the cerebral symptoms, I had the head and neck sent to my surgery, where, in the presence of a surgeon, I made an examination. Upon making an incision through the common integument, a large quantity of serous effusion was met with, and on opening the cranial cavity the meninges of the brain and spinal cord were found to be slightly congested. In

cutting into the substance of the brain, the tumours sent to you were found to be occupying the whole of the floor of the lateral ventricles. They were enclosed in a thin membrane, and loosely attached to the plexus choroides. The largest was taken from the off side, which no doubt was the cause of the animal's going round on that side.

"I am, &c.

"To Professor VARNELL."

The tumours referred to in the preceding letter were about the size of, and similar in form, to a pullet's egg. They possessed the same characters as those which are occasionally found in the lateral ventricles of the brain of the horse. Their surfaces were granular, and each had a kind of peduncle by which it was attached to the plexus choroides.

I may here remark that the pressure of tumours imparted to the substance of the brain does not often produce any marked physiological disturbance until they reach a certain size. In the case in question it is not improbable that some other pathological condition was added to that which may have been caused by their presence, which, coming into operation, produced the phenomena observed prior to the animal's death. Every practitioner has, doubtless, noticed instances of "*megrims*," which he has been able to trace to the existence of tumours in the lateral ventricles of the brain. I have been able to do so on several occasions, and, in one instance in particular, a succession of fits was followed by general paralysis. It would, however, appear that, in the case in question, some additional symptoms, not usually observed, were present; *viz.*, œdema of the head and tongue. This pathological phenomenon would almost lead to the inference that the ganglia upon the sympathetic nerve, had, in some way or other, been interfered with, whereby the controlling power of the blood-vessels of the swollen parts was withdrawn, their coats becoming, in consequence thereof, so much relaxed as to allow of effusion into the connecting areolar tissue of the organs affected. We find that the tongue in this case was much swollen, and as was also, I have doubt, the mucous membrane of the fauces and larynx, which would account for the difficulty in breathing, alluded to by Mr. Hardy. The case altogether is complex in its nature, but it is not very unlikely that the horse might have lived much longer, in so far as the tumours in the ventricles of the brain were concerned, although they no doubt caused some disturbance to the

functions of the cerebrum. Added, however, to this disturbance, there was the influence of disease of another character, which made the case complicated and very difficult to understand, and rendering the attempt to form a definite diagnosis altogether futile. Doubtless there are certain symptoms diagnostic of undue pressure to the brain, yet no one, I imagine, would venture, except perhaps in special cases, to assert what the precise nature of that pressure really is.

To the scientific inquirer it indeed would be interesting, as well as instructive, to be able to ascertain when such formations in the ventricles of the brain commence, that he might trace their development, and also their rate of growth.

In veterinary jurisprudence such knowledge would be of the greatest importance, could it possibly be acquired, but as this is not at all probable, it would be desirable that special provision should be made with reference to the law of warranty of soundness in such cases. For example, a horse is sold warranted sound, but a short time afterwards he is attacked with some brain affection, from which he dies. A *post-mortem* examination is made, when it is found that he died from the effect of a tumour or tumours, as may be, in the lateral ventricles of the brain. If it be believed that these tumours existed at the time of sale, the horse, without doubt, was *unsound*.

TOXICOLOGICAL NOTES.

Communicated by Professor Tuson, Royal Veterinary College.

(*Continued from p.* 221.)

Note III.—*Poisoning of a Pony by Arsenic.*

On the 22nd of last month, Mr. Page Wallis, M.R.C.V.S., of Cambridge, to whom I am indebted for permission to publish the following case, forwarded to Professor Varnell the stomach, part of the colon, and also some of the contents of these organs, taken from a five-year-old pony. The viscera, &c., just named, were accompanied by a letter from Mr. Wallis, in which he states that "the pony was brought to my infirmary yesterday morning, being supposed to be griped. However, on making an examination of the animal,

I found the symptoms to differ very greatly from gripes, as well as from those which I had seen in horses affected with inflammation of the mucous-membrane of the intestines, a disease common among farming horses that are freely supplied with freshly cut chaff, especially about harvest time, when they also get large quantities of new corn. The pony was in great pain, and purged violently; peculiar gurgling noises were heard in the intestines, particularly before an evacuation took place; the fæces were of a most offensive character; the pulse was small and thready; the extremities and the surface of the body were remarkably cold, while the breaking out of perspirations, which is generally observed in cases like this, was not observed. The only position in which the animal would keep quiet for a few seconds was lying on his back, with the hind legs stretched out upwards. After a few hours I noticed that he appeared to lose the use of his hind legs, as he became unable to stand on his feet, but supported all his weight on the fetlock joints, and on the metatarsal bones. Shortly before he died he lost all power over his hind legs, but could get on his fore ones, trying, in this position, to roll over with his fore parts. He continued to suffer torturing pain for about twelve hours, when he died.

The treatment I adopted consisted in the administration of opium, ether, &c., and in the application of hot fomentations, and mustard and ammonia as counter-irritants.

On making a *post-mortem* examination I found the lungs, heart, and liver to be slightly congested, while the spleen was *highly* congested, and of an immense size, but free from chronic disease. "The mucous membrane of the stomach and intestines gave evidence of intense inflammation." Owing to the results of the *post-mortem* examination having excited doubts in the mind of Mr. Wallis, with reference to the cause of the animal's death, and in consequence of the pony having been very healthy prior to his showing the symptoms above narrated, Mr. Wallis was induced to send Professor Varnell the stomach and colon for his inspection, with a request that, in the event of the Professor considering it desirable, the case should be entrusted to me for chemical investigation. My colleague having made a careful examination of the stomach and colon, and found them both highly inflamed, formed the opinion that the animal had probably died from the effects of some irritant poison, and therefore, in conformity with the wish of Mr. Wallis, placed the viscera and a bottle containing some of their contents, in my hands for analysis, the nature and results of which I will now

shortly describe. The mucous coat of the stomach and colon were first examined by the unaided eye, and also with the assistance of a pocket lens, to ascertain whether or not fragments of any poisonous agent were mechanically adhering to it. No such fragments were seen.

Part of the semi-fluid contents of the alimentary canal were placed in a tall, conical glass, and submitted to the action of a constant stream of cold water, for the purpose of washing away light substances, and of enabling any arsenious acid which might be present to subside in a sufficiently pure state to be identified by its optical properties and by other characters peculiar to this poison; but no arsenic was detected by this process.

Portions of the stomach and the colon were next separately examined by Reinsch's test, when arsenic was readily discovered in both instances. The revelations obtained by Reinsch's useful method were corroborated by distilling pieces of the thoroughly dried stomach and colon with hydrochloric acid, and then examining the distilled liquid by Marsh's process. All the characteristics of arseniuretted hydrogen, including the peculiarly tinted flame, the deposits of arsenicum, both on porcelain and in the tube through which the gas passed, &c., were most readily and easily observed.

By Reinsch's method arsenic was detected in the contents of the alimentary canal.

It would have been exceedingly interesting, to me at all events, to have rendered more complete information in reference to the absorption of the poison, but unfortunately I have been debarred the opportunity of so doing, in consequence of my inability to obtain from Mr. Wallis the liver or kidneys of the pony. I wrote for these organs, but they had unluckily been thrown away.

With reference to the particular form of arsenical compound administered to the pony I can give no positive opinion, owing, in all probability, to by far the greater part of the poison having been expelled by purgation. Nevertheless, I believe that the symptoms were referable to arsenious acid, commonly called white arsenic. My reasons, although anything but incontrovertible, for entertaining this opinion are—first, that arsenious acid is perhaps the arsenical compound most easily procured; and secondly, that by rinsing the coats of the stomach and colon in distilled water, and filtering, as well as by diluting and filtering the semi-fluid contents of the alimentary canal, I obtained liquids in which the presence of arsenic was most satisfactorily demonstrated.

Note IV.—*Poisoning of Calves by Bullet-spray.*

Were it not for the fact that cases of poisoning by bullet-spray are, among both cattle and sheep, somewhat novel, and that they probably occur more frequently than is generally supposed, I should not have intruded another instance of this kind of poisoning upon the notice of the readers of the *Veterinarian*.

The cases about to be related were sent to me by Mr. A. B. Proctor, M.R.C.V.S., of Meriden, near Coventry, who has kindly furnished me with the particulars connected with them. In a letter received on the 22nd of April, 1865, Mr. Procter states, "I have to-day sent you the stomach, intestines, and kidney of a yearling calf; also the lead found in the stomachs of two calves that died a few days since.

"The animals from which the viscera and lead were taken were the property of Mr. T. Phillips, of Allesley, near Coventry. About the middle of July last, Mr. Phillips turned out nine calves on grazing ground, upon which the Coventry Rifle Volunteers practise shooting. The calves were taken up into pens about Christmas, and, although kept on liberal diet, they did not thrive. About the second or third week in April last the calves were returned to their former grazing ground. Two of the calves soon died, but Mr. Phillips entertained no suspicion with respect to lead being the cause of death, until his man, whom he directed to skin and boil the carcases for the dogs, informed him that on opening the stomachs large quantities of lead were found therein. Mr. Phillips now thought that lead might have killed the calves, and accordingly saved one stomach and portions of intestine and kidney of one animal, and the contents of the stomachs of both, in order that I might inspect them, and furnish him with an opinion on the cause of death. After making the necessary examination, learning from Mr. Phillips the history of the cases, and noticing the quantity and condition of the lead found in the stomachs, I did not hesitate to give it as my opinion that the animals had died from slow poisoning by lead. However, as I had not seen any other viscera than those preserved by Mr. Phillips, I could not speak so decisively as I could have wished, and therefore suggested that the stomach, &c., referred to, should be forwarded to you for analysis, and for your opinion as to whether absorbed lead was the cause of the calves' death."

It will doubtless be remarked that the interest attaching to these cases is diminished by the circumstance that little or no account is given of the symptoms presented by the animals. In an *addendum* to the letter from which I have just quoted, it is, however, stated that the remaining seven calves were in a very emaciated condition, and that Mr. Phillips had also lost two or three cows, which had dwindled away without any apparent disease, and which had been pastured on the same rifle-practice ground. Mr. Procter also stated that a Mr. Oakley, whose land adjoins the practice-ground, and on which also a large quantity of bullet-spray exists, had twelve beasts pastured there last summer, and in the stomachs of ten of them, which were sent to the butcher in November last, a quantity of lead was found. Those animals were, however, to all appearances, perfectly healthy up to the time of their being killed.

On the 22nd of April last, about five months after the slaughtering of the ten beasts, the remaining two were alive, but in the last stage of emaciation, although they had been liberally kept during the winter. Mr. Procter had no doubt that when these two animals were slaughtered lead would be found in their stomachs. To show the correctness of this opinion, I may mention that on the 11th of June Mr. Procter informed me that one of the two beasts had died at the commencement of the month, and that in its stomach bullet-spray was found. The other beast was apparently much better, owing, as Mr. Procter thought, to the fragments of lead being gradually eliminated from the system with the fæces.

These cases are of great interest and importance, inasmuch as the evidence afforded by their study is corroborative of the opinion expressed in my former communications; to the effect that lead-spray is capable of being licked up by animals with the herbage while feeding; and that if it remains in their stomachs for several months it proves destructive to life, by being slowly taken up into the circulation after undergoing solution in the gastric and intestinal juices. These cases also show the necessity that exists for giving free publicity to their occurrence, in order that both farmers and riflemen may be aware of and endeavour to avert the severe loss and heavy penalty to which ignorance of such matters might render them liable. In conclusion, I may observe that the coats of the stomach and intestines of the first-named animal were analysed, and found to contain lead. The same metal was also detected, in a *soluble* condition, in the contents of the stomach and intestines. Lead also had been absorbed into the circulatory system, a fact which was ascertained by its

being discovered in the kidney. The bullet-spray had all the physical and chemical qualities of that obtained from the Rugby rifle-butts, and described by me in the *Veterinarian* for August, 1864.

THE EXCLUSIVE RIGHT OF THE MEMBERS OF THE BODY CORPORATE TO THE NAME AND TITLE OF "VETERINARY SURGEONS."

By Professor G. T. Brown, M.R.C.V.S., London.

"And we do further declare and grant, That the veterinary art as practised by the members of the said body politic and corporate shall be henceforth deemed and taken to be, and recognised as a profession, and that the members of the said body politic and corporate solely and exclusively of all other persons whatsoever, shall be deemed and taken and recognised to be members of the said profession or professors of the said art, and shall be individually known and distinguished by the name and title of VETERINARY SURGEONS."—*Extract from the Charter of the Royal College of Veterinary Surgeons.*

Any one reading the above portion of our Charter of Incorporation could hardly escape the conclusion that the "name and title of Veterinary Surgeon" was meant to be exclusively confined to those who, after attending the prescribed course of instruction, had passed the proper examination, and been admitted into the "body corporate." Nor can there be a doubt that such was and is the intention of the clause. There could be no possible object in distinguishing a body of men by a certain title, which should afford a guarantee of special qualifications, if it had been contemplated to recognise the assumption of that title by any who, minus the requisite authority, might see in it a means of securing to themselves certain advantages to which they have no just claim.

It is perfectly idle to enter upon the discussion of collateral points, relating to the respectability or practical experience of many of those who practise the veterinary art under the *assumed* title of veterinary surgeons. The profession, acting in support of the spirit and obvious meaning of the letter of the charter, have a right to demand that all who choose to practise without authority shall not do so under false colours;

while the public likewise has a right to demand that a name which legally belongs to the members of a corporate body shall not be assumed by those who are not members of that body.

The whole intention of the charter is frustrated, the public is imposed upon, and the members of the profession are placed in an anomalous position by the existence of a large body of men who, not content with practising the veterinary art without authority, have recourse to the assumption of a surreptitious title, and represent themselves to be what they are not. Surely this is no proof of either respectability or morality; whatever may be the extent of the practical experience, or the amount of the knowledge of the men who act thus. It is easy to understand that much hardship would be felt if a prohibitory enactment preventing unqualified men from practising at all were passed, but it is difficult to see where the injustice lies, when it is only sought to render the act of taking what does not belong to him an offence punishable by penalties.

At the last annual meeting Professor Spooner commented forcibly upon the unsatisfactory position of the profession, and urged the propriety of coming before Parliament with a Bill, simply asking them to ratify the provisions of the charter, leaving out all claims, which are hardly likely to be entertained, for exemption from parochial duties. Not seeking to hinder those who have long practised, or who intend to practise the veterinary art without being qualified, but merely praying that, in accordance with the spirit of the charter, they shall not be allowed to assume the name which exclusively belongs to the members of the chartered body. Professor Spooner stated his firm belief, and gave satisfactory reasons for it, that the Government would not refuse a request so reasonable.

The profession, however, should speak out with no uncertain voice. The present time, the eve of a general election, is a most favorable one for ascertaining what support such a Bill is likely to meet with; and it is not asking too much that members of the profession should adopt Mr. Wilkinson's suggestion, to ascertain the feelings of their representatives, and report to the Council without delay.

The privilege sought may not be of vital importance, but it is nevertheless a right, and the profession is not true to itself if it does not make a strenuous and combined effort to secure it.

BOTANY AS APPLIED TO VETERINARY SCIENCE.

By W. Watson, M.R.C.V.S., Rugby.

(*Continued from* p. 294.)

When describing the plants which constitute the food of our domestic animals, our attention was directed to the general botanical character of a very interesting "natural order" of plants, viz., the "*Umbelliferæ*," or parsley tribe. It will now be necessary to refer to it again in connection with several powerfully poisonous plants. It will be remembered that the "order" belongs to the class of *Calycifloral Exogens*, and although the somewhat complicated minuteness of the botanical characters may require more than ordinary observation to distinguish the plants from each other, the following distinctive features will at once enable us to recognise the order, viz. :—"The flowers growing in umbels, the superior petals turned in at their points, and the inferior fruit, which splits into halves, commonly called seeds." There are few orders of plants in the vegetable kingdom, under which are classed so many plants possessing such various properties; several of them are used as articles of food, and in domestic economy, such as the "carrot" (*Daucus carota*), "parsnip" (*Pastinaca sativa*), and the "celery" (*Apium graveolens*); others as medicinal agents, amongst these the "aniseed" (*Pimpinella anisum*), and several valuable gum resins, as Assafœtida and Galbanum, &c., while many possess poisonous properties; amongst these will be found the common hemlock (*Conium maculatum*), the "Water Hemlock or Cow-bane" (*Cicuta virosa*), and the "water droopwort" (*Ænanthe crocata*). To these latter we will now direct attention, and bring under notice the botanical and other characters of those possessing features of greatest interest.

Conium maculatum (the *common* or *spotted Hemlock*). "*Root* biennial, fusiform, whitish, a little fleshy. *Stems* 3 to 5 feet high; erect, round, smooth, spotted with dull-coloured, purple spots. *Leaves* large, shining, of a deep-green colour, tripinnate, on long furrowed petioles, sheathing at the base. *Leaflets* lanceolate, pinnatifid, with the lower lobes incised, the others toothed. *Umbels* numerous, terminal, composed of many general as well as partial rays. General involucre of from 3 to 7 leaflets, ovate, cuspidate with membranous edges, partial involucre of 3 leaflets, on one side ovate lan-

ceolate, shorter than the umbels; margin of the calyx obsolete. *Petals* 5, white, obcordate, with inflexed apices. *Stamens* 5. *Ovary* ovate, 2-celled. *Styles* 2, spreading. *Fruit* ovate, compressed laterally. *Carpels* or half-fruits, with 5 prominent, equal, undulated, primary ridges, of which the lateral ones are marginal. No secondary ridges. The channels with many striæ but no vittæ." (Royle.)

This plant has been known from a very early period; both Greek and Roman authors were acquainted with it, and it is believed to be "the celebrated *Athenian state poison* by which Socrates and Phocion died." It is a biennial plant, found growing in most of the temperate parts of Europe and Asia, and in considerable abundance in ditches and waste places in this country. It attains a height of from two to five feet, flowers in June and July, and ripens its fruit in August and September. The whole of the plant possesses a peculiar, strong, fetid, mouse-like odour, and a nauseous, bitter taste. The following remarks in Pereira's 'Materia Medica' will sufficiently point out the characters by which this plant may be distinguished: "the large, round, smooth, spotted *stem;* the smooth, dark, and shining green colour of the lower *leaves;* the *general involucre* of from 3 to 7 leaflets; the *partial involucre* of 3 leaflets; the *fruit* with undulated, crenated, primary ridges. To these must be added, that the whole *herb*, when bruised, has a disagreeable smell (compared by some to that of mice, by others to that of fresh cantharides, or of cat's urine)." All parts of the plant possess active properties, but only the leaves are used in medicine. These should be gathered the second year of growth, just before the plant comes into flower. They should then be carefully dried, and excluded from the light. As a medicinal agent it is not much used by the veterinary surgeon, in human medicine, however, it holds a rather prominent position, as an alterative in glandular and visceral enlargements, and in obstinate diseases of the skin. It has also been used with success as an anodyne in the advanced stages of acute rheumatism. As a poisonous agent it acts powerfully both upon man and animals, and even plants are not exempt from its influence. "Marcet placed a haricot plant (*Phaseolus vulgaris*) in a solution of five grains of the extract of hemlock. In a few minutes the two lower leaves curled up at their extremities; the next day they were yellow, and subsequently died." Numerous fatal cases are recorded of its poisonous effects on the human subject. In reference to this, Dr. Taylor says: "The effects produced by hemlock have not been uniform; in some instances there have been stupor, coma,

and slight convulsions; while in other cases the action of the poison has been chiefly manifested on the spinal marrow, *i. e.*, it has produced paralysis of the muscular system." Various accounts have been given with reference to its effect upon animals. By some it is said to be only poisonous to cows, and "that sheep eat it with impunity, and horses have occasionally swallowed considerable quantities without apparent effect." Moiround gave three pounds and a half of the plant to a young horse, without inconvenience; but in another instance a decoction of four ounces proved fatal. It is generally admitted that it acts very powerfully on all carnivora.

It is somewhat difficult to reconcile the conflicting accounts respecting the action of the *Conium maculatum* on animals, we should, however, I think, be justified in looking upon it as a powerfully poisonous agent, and that many of the cases where it has been administered to or partaken of by the animal, in which its injurious effect has not been apparent, have been very much influenced by the age of the plant, the season at which it was gathered, and the situation in which it grew. The following observations, by an eminent writer, will confirm this; he says: "A general rule, of some value to persons indifferently acquainted with botany—the more so as many of the most common wild umbelliferæ, of entirely opposite properties, are so nearly alike in general appearance as to be readily mistaken for one another by the ignorant—is that those species which inhabit watery sites are usually poisonous, and those which inhabit high dry sites are usually wholesome; and so much does this rule hold, that it may possibly suggest some explanation why certain species which are poisonous in their wild state, become wholesome by cultivation, and why certain other species, such as *Ænanthe fistulosa*, and *Ænanthe crocata*, are violently poisonous in some districts, and comparatively or wholly innocuous in others."

A very interesting account of the poisonous influence of the hemlock amongst cattle is recorded by Mr. John Holford in the *Veterinarian* for 1861. From his description it appears that about the 10th of May twenty-five dairy cows were turned into a field to consume the rough grass. The field consisted "of a marshy piece of ground, surrounded by a brook which after any quantity of rain overflowed it. The herbage consisted of coarse grass of all kinds, and the common hemlock (*Conium maculatum*) particularly prevalent." The animals exhibited the following symptoms:—he says, "On entering the cowhouse of those that appeared to be worst, I found three seemingly lifeless, but on a close examination I with difficulty found the pulse, which was of an

extremely feeble character, beating but little more than half as rapidly as when in health. The extremities were deathly cold, but respiration not much altered. The eyes were closed, and, on elevating the lids, the pupils were much dilated and the retina not susceptible of light. The brain was powerfully affected, and, in fact, all the animals exhibited the *coma somnolentum*. The neck and head were extended, and on lifting them up they fell again to the ground like a piece of inanimate matter. The bowels were inactive, and the whole surface of the skin cold, with the hair standing erect." Mr. Holford's treatment consisted in the immediate administration of the most active purgatives, followed by stimulants, consisting of carbonate of ammonia and spirit of nitric ether every four hours. Only one cow died, and he considers that her death was accelerated by the owner having bled her previous to his arrival. All the others, after suffering from much debility, recovered in the course of a fortnight.

Another case of suspected poisoning of yearlings and sheep by this plant will be found recorded by Mr. Bickford in the *Veterinarian* for February, 1861. There is also an instance of the poisonous effects of the seeds of the hemlock upon some ducks, in the *Veterinarian* for 1840. The ducks had plucked the seed from plants growing in a meadow, and shortly after exhibited the following symptoms: "Swelling of the craw, stupidity, and paralysis of the extremities." Milk and oil were administered, which soon produced purging in seven of them, which recovered, the other two died.

The active properties of the *Conium maculatum* depend principally upon a peculiar alkaloid named conia, which exists in the plant in combination with coniic acid. It is obtained by distilling an alcoholic extract of the seeds with water and a little caustic potash. When thus obtained it is a volatile, oily-looking liquid, of a pale-yellow colour, with a strong peculiar odour, and very acrid taste. It is not very soluble in water, but readily in alcohol and ether. As a poisonous agent it is very powerful, producing general paralysis, and death from asphyxia.

IDENTITY OF PLEURO-PNEUMONIA AND RUBEOLA.

Kolonga, Maryborough,
Queensland, Australia.

Gentlemen,—In the August and September numbers of your valuable publication of the last year, there appears a letter from W. Thomson, M.R.C.S., Victoria, on the identity of Pleuro-pneumonia with Rubeola. The subject is of vital importance to Queensland, and in fact to all the Australian colonies, and since the appearance of Mr. Thomson's letter I have looked anxiously in your pages for a review of or a discussion on his theory.

May I hope, gentlemen, that you will, at as early a date as possible, bring the subject under the notice of the profession, with the view of enlightening us, through the pages of your Journal (which is read with great interest by many out here), on the pathology of pleuro-pneumonia, and the benefits of inoculation especially.

Should my request be considered a trespass on the profession, you will allow me to plead in extenuation that I am the owner of a station with nine thousand cattle on it, and I am expecting to see the disease in my herd every day; also that, as Acting-Chairman to the Gladstone Association, for checking the spread of the disease, I am constantly appealed to for advice.

Believing, as I have always done, that pleuro-pneumonia is contagious, and inoculation a preventive, at any rate for a time, my notions have lately been rather upset by the report of a Royal Commission in the colony of Victoria. This report you will find in the inclosed circular; also, I think, the general opinion of it in the leading article. In the last page is given the most approved method of extracting and preserving the virus and inoculating the animals.

Again trusting that the extreme urgency of the case may plead my excuse for the rather unusual course I have pursued in thus making a general appeal to the profession, I beg to subscribe myself, Gentlemen,

Your most obedient Servant,

Wm. H. Holt.

To the Editors of 'The Veterinarian.'

[We hope to see this important subject fully discussed in

our pages. We are the more desirous of this, as our opinions have been so often and so fully expressed. Besides which, we are wishful not to fetter the views of our correspondents by a repetition of them.]

BLEEDING OF CALVES.

To the Editor of the 'Manchester Guardian.'

Sir,—In common with hundreds of humane persons, I have been for years shocked at the apparently inhuman practice of bleeding calves before they are slaughtered, and I have been at considerable pains to ascertain whether the letting of blood causes great or any suffering to the apparently unhappy victim. I have the opinion of several eminent veterinary surgeons, and of one or two professors, who all agree that I and other sensitive humanitarians are in error, and that little or no pain, certainly not any acute pain, proceeds from this apparently barbarous practice. They may be right, and we merely the dupes of imagination; but I want to know, if there is no suffering, what means that piteous cry which, until prostration ensues, the bleeding, sinking brute inevitably utters? The cry is an appeal—for what? In the hope that some leading professional will answer this question, and help to remove our agonies, or those of the poor calves, I beg you to insert these lines.

I am, Sir, your obedient Servant,

Common Sense.

[We insert the above extract, although our correspondent has omitted to send his name to us. The subject is one worthy of inquiry.]

Facts and Observations.

Destructive Epizootic in Russia.—Accounts from Russia state that from the 15th of January to the 27th of March of the present year it was found necessary to kill 47,000 horned cattle, 2543 horses, and 57,844 other domesticated animals, in consequence of their having been attacked with an epizootic disease which has been raging for some time in the departments of Minsk, Vitepsk, and Mohilew.

Polarization and Decomposition of Oxygen.—Few persons, it is stated by the editors of the *Quarterly Journal of Science*, have devoted themselves to the study of a favorite subject with so much constancy as Schönbein. Many years have now passed since that industrious experimenter first discovered ozone, and pronounced it an allotropic modification of oxygen. Pursuing the same subject, he afterwards arrived at the conclusion that when ordinary oxygen, such as exists in the atmosphere, enters into combination with oxidizable matters, organic or inorganic, in the presence of moisture, the molecule of neutral oxygen becomes split up into two opposite active atoms, or, as he expresses it, undergoes "chemical polarization." One of these atoms, is, he believes, united with the metal or oxidizable matter, while the other combines with the water to form peroxide of hydrogen. The fact of the production of peroxide of hydrogen, as well as a metallic oxide, during the slow oxidation of metals, Schönbein long since placed beyond dispute; but his theory of chemical polarization required an experimental demonstration of the fact that exactly the same amount of oxygen combined with the water as combined with the metal. This demonstration he seems now to have accomplished. At any rate the actual results come so near that no doubt is left of the truth of Schönbein's theory.

Important as Schönbein's investigations are to general chemistry, they have a far greater importance when considered in relation to physiological chemistry. The author considers that oxygen undergoes chemical polarization in the body when respired, and would thus account for the active changes which take place in the tissues. He has not yet succeeded in detecting the presence of peroxide of hydrogen in the blood, but he has shown that blood-corpuscles instantly

decomposed the compound. He has, moreover, found it in the urine, and explains by its presence the rapid oxidization of that fluid. Altogether these researches of Schönbein must be regarded as some of the most important on which chemists are engaged.

Since the above we have seen it announced that Schönbein has succeeded in isolating both ozone and antozone, the two bodies of which ordinary oxygen is composed. Antozone has a density less than that of hydrogen, and therefore is the lightest body known. It liquefies at a pressure of 150 atmospheres. The two gases combine with explosion when exposed to the dark rays of the spectrum; and ordinary oxygen is reconstituted. This decomposition of a gaseous element must be regarded as one of the greatest chemical discoveries ever made, and we impatiently wait confirmation of the statement.

Fearful Death from Hydrophobia.—An inquest has been held on the body of a boy, named Duffy, aged twelve years, residing in Dean's Court, Old Bailey, London. From the evidence of the father it appeared that three months ago his son was savagely bitten on the right hand by a dog in Holborn. The wound was attended to, and he appeared to have quite recovered, when on Friday last his eyes exhibited great dilation, and he could not drink water, although he tried to suck it through a straw. On Monday he was found foaming at the mouth, and wiping the saliva off with the backs of his hands. He complained of choking in the throat and pains, and he died soon after from hydrophobia. The jury returned a verdict of "Death from Hydrophobia."

Poisoning Dogs.—A short time since, at the village of Stonegrave, about twelve miles from Malton, some one strewed, wholesale, pieces of beef poisoned with strychnine. It is said that most of the sheep dogs in the neighbourhood, with various other animals, are poisoned. Some uneasiness is felt from a belief that some of the poisoned beef was dropped into a draw-well. The police are believed to have a clue to the offender.

Destruction of Sheep by Lightning.—A farmer's son and a flock of 152 sheep were recently killed in Luxembourg by lightning. The sheep were covered with blood, and showed the most extraordinary effects of the lightning; the heads of some were pierced through and through, while others were removed from their bodies.

Noxious Vapours Act.—The recent report of Dr. Angus Smith states that the late Act, passed to prevent the escape of noxious vapours into the atmosphere from alkali works, has been completely successful. Before its passing it has been calculated that not less than 4000 tons of muriatic acid were weekly poured into the atmosphere, destroying vegetation all around, which is now reduced to forty-three tons. As from some manufactories there is absolutely now no escape of gas, it is hoped that greater improvements will be made in those in which some escape is still allowed to take place, since the best disposition is said to be manifested by the manufacturers to carry out the Act. It has also been suggested that it might be extended to other works—copper works, for instance—so as to prevent the injurious consequences which are known too frequently to result from them, of which a notable instance was recorded in our number for May last.

Supposed Composition of Nitrogen.—Mr. H. Kilgour endeavours to establish the proposition that nitrogen is an allotropic form of carbonic oxide. His grounds are, similarity of properties, identity of atomic weights and combining volumes, also from their being approximately of the same specific gravity. But his views, it appears, require confirmation.

Identity of Heat and Light.—Professor Tyndall appears to have experimentally demonstrated that heat and light are only modifications of the same thing. To effect the change of heat into light he obtains a cone of convergent rays by concentrating the rays of the electric light with a small mirror, and then intercepts all those that are luminous by an opaque solution of iodine in bisulphide of carbon, which allows all the calorific rays to pass on to a focus. This latter, even in a darkened room, is completely invisible, but any combustible substance, such as zinc or magnesium, placed within it, becomes intensely brilliant. To render it impossible that luminosity is due to combustion, platinum was thus heated *in vacuo*, and the light emitted produced a perfect spectrum.

Elimination of Nitrogen from the System.—Dr. Playfair states that nitrogen having performed its uses in the organism as a constituent of nutrient matter, is eliminated from the system in the urine and fæces. Bischoff and Voit have proved this to be the case in dogs, Henneberg in cows, Lehmann in pigs, and Ranke and Smith in men.

Length of Life in Animals.—It has been stated that the length of life in an animal is a multiple—say by 5, approximately—of the length of his growth. Thus, a man grows 20 years and lives 90 or 100; the horse grows 5 years, lives 25; the lion grows 4 years, lives 15 to 20; the ox grows 4 years, lives 15 to 20; the dog grows 2 years, lives 10 to 12; the cat grows $1\frac{1}{2}$ years, lives 9 or 10; the hare grows 1 year, lives 8; and the Guinea pig grows 7 months, and lives 6 or 7 years. The true sign of animal growth is indicated in the reunion of the bones to their epiphyses. So long as this union does not take place the animal grows.

Production of Parasitic Diseases from the Utilization of Sewage.—Dr. Cobbold is of opinion that if the proposed utilization of sewage be extensively carried out the fluke epidemic of Africa will in twenty years be as prevalent in this country as it is now in some sections of the African continent. He states that this parasite has made its appearance in this country, and in the advanced stages of the malady, as the afflicted individual must frequently evacuate the ova and their embryonic larvæ, if these be carried by a common sewer into the sea, or conveyed into a cesspool, they will do no harm. But if scattered broadcast, they will be spread over thousands of acres of ground, placing the larvæ in conditions favorable for their new stage of development, in which stage they will penetrate the bodies of land and water snails, after which there is every reason to believe that they will experience no difficulty in gaining access to our bodies.

Lenoir's Gas Engine.—This engine may now be seen in daily use in London. The cylinder has the necessary arrangements for the admission of coal gas and atmospheric air in due propertions, and which at the proper moment are ignited by the electric spark. The mixture exploded is about eleven volumes of air to one of gas. Contact is made and broken by the rotary action of the crank shaft, and the explosive force consequent on the ignition gives motion to the piston on each side alternately. The consumption of gas is, as near as may be, seventy feet per horse-power per hour of actual work, giving a cost of gas, with gas at 4*s.* 6*d.* per thousand feet, of about 4*d.* Besides this cheapness, the engine is recommended by its simplicity, cleanliness, and safety. When set in motion the machine requires no attention, and the batteries want charging only once a week.

THE VETERINARIAN, JULY 1, 1865.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

ELECTION OF PRESIDENT OF THE ROYAL COLLEGE OF VETERINARY SURGEONS.—INDICATIONS OF PROGRESS.

WE hesitate not to express our conviction that there is not a member of the profession but will approve of the unanimous election of Professor Varnell to the Presidentship of the Royal College of Veterinary Surgeons for the coming year.

Few men have been more earnest than he has in promoting the advancement of the profession, and maintaining its dignity. His light has never been hid under a bushel, but boldly and openly has he acted in his advocacy of measures conducive to our onward progress. In the pages also of our Journal he has not only placed on record cases of considerable interest and value, but very frequently increased the worth of others by his elucidatory remarks. Much that is suggestive has fallen from his pen, which has led others to the institution of inquiries respecting the etiology of disease, whereby much of the mystery that surrounds investigations of this nature has been removed. We need scarcely add, that a knowledge of the cause of a malady will lead to its correct treatment, as well as tend to its simplification; while the symptoms, often ambiguous, will be more easily accounted for.

We cannot refrain from expressing a hope that the official year of Mr. Varnell will be characterised by acts which will result in the effecting still greater progress, and in cementing a firmer union among the members of our profession. "United we stand, divided we fall."

There appears to us to be so much in the present and former number of our Journal that affects the interests of the profession, or may do so, that we feel inclined to offer some general comments thereon. First in importance we consider is the subject-matter of the communication by Mr. Brown, as it is not only a stepping-stone in the way of advancement, but

absolutely a foundation-stone of our real existence as a body, giving us a *locus standi*, and establishing us in our privileges as a body. His reasoning thereon we consider as conclusive. To obtain this, our common right, surely it is only necessary that it be pointed out to the legislature, and by co-operation to enforce its adoption. Thus will be gained a position that will deter the presumptuous from encroaching upon us, and by adding to our numbers men correctly instructed in the elements of their profession, we shall gain both strength and influence; while hereafter, these being duly exercised, will obtain for us other privileges with desired immunities, for to give us a right, and not allow of its recognition, is like bidding us drink out of the cup of Tantalus.

In close alliance with this was the paper in our previous number by Mr. Dyer, 'On the Social Position of the Veterinary Surgeon.' With very much that he has written we concur. "'Tis true, 'tis pity; pity 'tis, 'tis true;" and yet it is desirable that distinctions should exist. We are no levellers. Orders or grades of society for its well-being must ever be maintained, and the individuals constituting each section will be respected according to their deportment. Acts of Parliament will neither make men gentlemen nor impart knowledge. The truest policy is, not only to be satisfied with the station in which we are placed by Providence, but honorably to fulfil its duties, each acting as if on him depended the well-being of the whole, for by so doing we shall best advance its interests.

Similar in its purport was the communication by Mr. Whalley, which contained much that is suggestive and calculated to awaken thought, while of what he has complained redress should be sought, there being a concurrence of views between him and Mr. Brown as to the assumption of the title of veterinary surgeon by those who have no right to it. Nevertheless, it is well known that we are advocates for education, both scholastic and scientific, believing that this will tend more to promote our advancement than anything else. It is the want of this that has kept us so long in the background, and allowed the ignorant pretender to entrench upon our confines. Moreover, at the present day,

middle-class education is making rapid strides; and, as it has lately been remarked by Mr. Gladstone, at a meeting of one of the colleges for its promotion, "A large and liberal provision has been made by successive governments for the purpose of promoting popular education, and these means have enabled the more intelligent portion of the labouring classes to place themselves in such a position that it may be said they tread upon the heels of the middle classes; and if the middle class is to keep its position, it can only be done by new and extended efforts; and if they looked to the higher classes, they would see that it is the same."

With much gratification we refer our readers to the advertisement on the cover of this Journal, announcing the proposal of a Veterinary Medical Association for the Western Counties and South Wales. We are sure the members of the profession living within the circle it is intended to embrace will not be slow in responding to the call, but will hasten to enrol themselves constituents of the Society. Its promoters have chosen a most opportune period for the inauguratory meeting to take place, namely, during the time of the Royal Agricultural Society's visit to Plymouth. Sincerely do we wish them every success; of which we entertain no doubt whatever, knowing as we do their energy and zeal. There is, likewise, much fitness in the first meeting being held at Plymouth, although it is somewhat far down in the west—but what is that in those days of railroad expedition and conveniences?—because there originated the proposition to form provincial medical associations by Mr. Warne Raddall, who is most appropriately announced to take the chair and give an opening address. Then, too, may be noticed the place where the meeting is to be held, "At the Guildhall, Plymouth, by the kind permission of the mayor." Surely the beginning is most auspicious, and leaves nothing to be desired. Here we may be permitted further to observe, that scientific and other bodies allowing of the meetings of our medical associations to take place in their halls and theatres is a fact full of significance, and shows the advancement the profession has made in the public estimation. We augur much good from this favour, and

are quite certain it will never be abused. It is in every sense a recognition and a privilege to be desired.

It affords us much gratification to be called upon to report the continued progress of the provincial veterinary medical associations already formed. What they are doing they are doing well. Their members are not slow in ascertaining what may prove conducive to the good of the body generally. We look upon the proposed conference between them for the purpose of forming a Mutual Protection Society, as a measure fraught with the greatest value. It is true it is not new, a similar suggestion having been made some time since by others we need not now name. This, however, detracts not from the worth of such a society, but rather proves its necessity.

Now surely all this is indicative of progress. A desire to advance is evinced, and a determination manifested to keep pace with what is going on around us. Science is progressing at an electric pace, and calls for all her accessories to be on the alert. Let us not be laggards in the race. We have not attained to perfection, and never shall. Much still remains to be learnt, and ever will, for the object of science is not only to lead to the discovery of truth, but by its application to ameliorate man's condition, and to contribute, by an application of its laws, many of which are ill understood, with all our boasted knowledge, to his happiness. The same obtains, differing only in degree, when these laws are applied to the lower animals, with which the practitioner of veterinary medicine has to do, and to whom speculative opinions are but of little worth. Knowledge, moreover, is expansive, and as it increaseth brings with it corresponding desires for still more. The mind may be said never to be satiated. As fresh fields for investigation and inquiry present themselves, fresh strength is acquired, so that that which at the first seemed to be insurmountable, becomes in its pursuit comparatively easy and delightful. On the other hand, a mere love of glory

> "——— is like a circle in the water,
> Which never ceaseth to enlarge itself,
> Till by broad spreading it disperse to nought."

Extracts from British and Foreign Journals.

PREVALENCE OF RABIES IN AND AROUND LONDON.

For the last two or three months rabies has prevailed to a greater extent than common among dogs, both in the metropolis and its environs. In the neighbourhood of Enfield several sheep have been bitten, some of which have fallen victims to this frightful malady, and others been killed with a view of preventing its attack. Worse than this, many persons have been bitten, and two or three deaths from hydrophobia have occurred. We extract the following lamentable instance from a daily paper:

On the evening of June 8th Mr. Bedford held an inquest at Westminster Hospital respecting the death of George Burchell, aged 17, who died from the effects of hydrophobia, having been bitten by a dog nine weeks since. It appeared that the deceased was walking along the towing-path at Woking when a dog came towards him. He patted it on the side, when it turned round and bit his hand. It then ran off. Shortly afterwards a violent pain in the hand ensued, and a woman who knew him washed the wound with warm water. He then went home to bed, and a doctor was called in. He continued very bad until Friday evening last, when, by the advice of three medical gentlemen, he was brought to the Westminster Hospital, where he died on Saturday last. Mr. Charles St. Aubyn Hawkins, senior house-surgeon to the hospital, deposed to the admission of the deceased, and the lad having told him that he had been bitten by a dog. He saw two cicatrices on the left hand, about an inch apart. The deceased was suffering from symptoms of hydrophobia. He had spasms, a flow of saliva from the mouth, and an intense desire to drink. When water was offered him he clutched the vessel, but was unable to drink. His face became black, and his eyeballs protruded. Opium and soothing medicines were administered. The cause of death unquestionably was hydrophobia. The jury, in conformity with the evidence, returned a verdict of "Death from hydrophobia through the bite of a dog."

There are now several out-patients of the Westminster Hospital suffering from bites of dogs.

We read in the public prints of two cases of hydrophobia recently occurring at Lyons.

A short time since much alarm and excitement was caused in the vicinity of Vauxhall Road, South Pimlico, and Belgrave Square, by the appearance of a large mastiff dog evidently in a rabid state. The animal rushed furiously through the various thoroughfares, biting and snapping at everything in its way. Several gentlemen were bitten in the leg, and one, Mr. Pendergass, dentist of Regent Street, Vauxhall, so seriously that a piece of the flesh had to be cut out, and the wound cauterized. Several ladies were attacked, but the crinolines saved them from injury, though their dresses were torn. A valuable horse, belonging to Mr. Ewing, of Eccleston Square, was bitten and it is feared will have to be destroyed; at length, the brute, while making its way towards Thames Bank, with a troop of men and boys at his heels, was destroyed by a coalheaver with a well-directed blow from a shovel. Instructions were issued yesterday by the Commissioners of Police for the apprehension of the owners of all dogs who shall suffer them to be at large after receiving information on reasonable ground that they are in a rabid state, or have been bitten by a dog in a rabid state. The penalty of £5 is to be strictly enforced against such persons, and the police are ordered to destroy all dogs found wandering about the streets without owners.

Several other cases are reported, on which the *Times* makes the following remarks:

"What can be more disgraceful, both to the individuals who keep these dogs and to the public regulations which allow them to go abroad, than such instances as these? Let it be considered what is the nature of the injury thus inflicted. It is no mere temporary or accidental annoyance. Here, at the very least (referring to the police report), are a labourer deprived for some days of his power of working and a girl in danger of losing her eye. But, serious as may be the loss of work and wages to the labourer, and the illness and possible loss of her eye to the girl, these are but trifles compared with the possible consequences, which in each case is nothing less than the most horrible of deaths. These unhappy persons must live for many months in terror of the fatal agonies of hydrophobia. Supposing that in either case such a result should ensue, what answer, let us ask, could be given by the person to whose reckless selfishness it must be attributed? The persons who keep these dogs must be perfectly well aware that they are loose, that they are unmuzzled, and that, even if not naturally fierce, they are likely to become so in such weather as we have been experiencing and amidst the unnatural worry of London. Educated

persons, at all events, ought to know better; and we cannot but believe that there are some among them to whom these flagrant examples of danger and these considerations of responsibility will not appeal in vain.

"It is quite plain, however, that there will be many whom no private sense of duty or consideration for others will induce to abandon a silly and selfish fancy, and this being the case, the public cannot be absolved from responsibility in the matter. Where life is exposed to serious danger by common and notorious neglect, and where private influences are insufficient to remedy the evil, the public is bound to interfere by the force of law. It will be seen from the sentence pronounced in the third of these cases that the offence is liable to some slight punishment. But even if the penalty were adequate to the offence, the law would still be inoperative from the extreme difficulty, exemplified by the second case in question, of discovering the owners of these stray dogs. Many of them have no owners, and many more would be readily disowned. At the moment when a measure is passing through Parliament to enforce the registration of dogs in Ireland, it is worthy of consideration whether some enactment with a similar purpose might not be desirable for this country. At all events, the occurrence within two days of the three dangerous cases we have quoted is a sufficient argument that some measures ought to be taken in the matter. Meanwhile we are satisfied that a great deal might be effected by the rigorous enforcement of the dog tax. We should like inquiry to be made as to whether the tax had been paid for the dogs in these instances. If not, the fine might be materially, and most usefully increased by the exaction of the tax, and, if possible, of the penalty also for payment having been evaded. The tax offers an instrument of repression ready to hand, and we exhort not only the tax-gatherers, but the neighbours, of those who keep dogs to bring it into action."

THE PRINCIPLES OF BREEDING HORSES ADAPTED TO THE LOCALITY.

(*A Lecture read by* T. D. Gregory, M.R.C.V.S., *before the Bideford Farmers' Club.*)

It may be considered, perhaps, a bad time in some respects to introduce the subject of horse breeding for your consideration, with a fair hope of its attracting so much of your atten-

tion as it deserves; particularly now that the breeding of cattle and sheep is found to be so highly remunerative, and so likely to continue. But I do not wish you to infer that any remarks of mine are intended to induce you to withdraw your attention in the slightest degree from so profitable a branch of your business; my intention and hope being simply to endeavour to point out the means whereby you may, by the application of a few correct principles, effect an improvement and breed a better and more useful class of horse, than many of you have heretofore done, and that too without incurring additional expense or trouble. There is an old saying well known to you all, "that any man is a benefactor to his country who can make two blades of grass grow where but one grew before." If you acknowledge this saying to be a correct one, surely a man must be a much greater benefactor who can grow a good horse where a bad one grew before. I think I may say with safety the horses of this neighbourhood have degenerated since my first knowledge of it, now some twenty years ago; not so much in number, perhaps, as in quality and usefulness. The demand for good ones having increased elsewhere, they are bought and taken away by dealers and others, and we who are users, and not breeders, are left with a sorry lot to choose from when we require them. I am every now and then met by this remark when talking to you, my agricultural friends, on the subject of horse breeding: "Oh, it does not pay to breed, it is cheaper to buy." Now suppose we are inclined to admit this, and many of you were to stop breeding altogether, where is the supply to come from? Horses must be had; they cannot be done without any more than you can deny the fact. You cannot make steam power subservient to all the motive purposes upon your farms, powerful and useful as it might be, and undoubtedly is. You cannot, at least in this district, cultivate your land by steam; by it you cannot convey your produce to market; the great and increasing traffic that feeds our railways cannot be done without the aid of horses; nor, gentlemen, without horses can you enjoy that glorious health-giving and most manly of British sports, foxhunting—and I know and am happy to bear witness that many of you in this room do enjoy it—and that you can and do go to hounds like men and Englishmen as you are. Breed horses then you must: it is a necessity; breed better ones you can, I firmly believe, if you only set about it in the right way, whether you require them for one purpose or another; if you only bring to bear upon the subject a portion of the same thought and judgment for which you are pro-

verbial in the breeding of other classes of stock. Horse breeding should not, nor must it be considered a mere chance matter. I don't mean to tell you you can always succeed more in this than in other affairs; but at least you may endeavour to deserve success if you cannot command it. Make up your mind to this—if a good horse does not pay for breeding a bad one won't. But I venture to assert that a good horse does pay, and as ready a market can be found for him as for beef or mutton. Should you not require him for your own use, there are persons who will find a promising one out; there is not a nook or corner in Great Britain or Ireland, but can be and is reached by dealers and others in search of horses. It is a very common occurrence nowadays to hear of persons travelling hundreds of miles upon the chance of buying a good class horse; nor is it necessary the breeder should wait until a young one is matured, or attains the age of four or five years before he can effect the sale. A promising three-year-old will not long lack a customer. I should not, as a rule, advise yon to lay yourself out to breed horses that require more than an ordinary amount of expense and risk. The more risk, the more chance of disappointment. It would be folly were I to tell you that you could profitably, if at all, breed such animals as the heavy cart-horse that is grown in the rich pastures of the midland counties; nor do I expect you will aim in an ordinary way to produce the three hundred guinea hunter calculated for Leicestershire or Northamptonshire. If you are moderate in your desires not to fly too high, but endeavour to breed the horse best calculated for the different requirements of the locality, you may, should you breed more than you require for your own use, always find a customer either in your neighbour or a stranger. Then comes the question what classes of horses are most required in this neighbourhood for the general purposes of the farm? The light-stepping vigorous animal is one, he that can command a fair load up and down our hills, and, with a companion, plough an acre of land a day, and occasionally be found useful to drive eight or ten miles an hour in a trap. If this pace can be got out of him without difficulty, what is more likely to command a sale, especially if good looking, for a gentleman's carriage or a postmaster? The other class most in request is the riding and light harness horse; and he, too, must be stout, active, enduring, and sure-footed, quick upon his legs, and able to gallop and jump a bit. But to accomplish this work satisfactorily, he must have blood on the one side or the other. Now, as neither of these classes are found in this neighbourhood, purely bred (by purity I

mean of any fixed type or established breed), they must be produced by crossing. The question arises, how and in what manner is this to be done with a fair chance of success? You must be aware that the subject of crossing has proved of late a fertile source of controversy, one person holding to one opinion, another to another. One says the cross should be on the side of the dam; a second on the side of the sire; while a third says there is no necessity for having purity on either side. Mr. Spooner, of Southampton, in a paper that has recently appeared in the last number of the *Royal Agricultural Society's Journal*, and to which I refer you, is of opinion that to breed hunters and useful riding horses generally, the thorough-bred mare should be put to the three parts or seven-eighth-bred sire. If this theory be ever so correct, we cannot hope to carry it out in this neighbourhood to any extent, unless we import a large number of thorough-bred mares, which we are not likely to do. The preponderance of opinion as far as I can ascertain, and certainly as far as my own observations have gone, is decidedly in favour of purity being on the side of the sire; and I am thoroughly convinced you will meet with fewer disappointments in breeding, if you want to cross, by having it on the female side. You are fully alive to the influences of the pure male animal, or you would not take such a considerable amount of trouble in the selection of your bulls and rams. Familiar instances of the effects of male influences upon progeny are shown in breeding from Guernsey or short-horn cow, and the Devon bull. A calf thus bred almost invariably partakes of the form of the bull, and particularly so as to colour—nine out of ten are whole coloured. Reverse it, and you as often get partly coloured calves. Again, if you work a horn ram with nott ewes, you get lambs with horns; adopt the opposite plan (as many of you have done of late years, in the vain hope of getting more constitution in your flocks) by using nott rams with horned ewes, and not one lamb in fifty is bred with horns. I don't believe in the double cross: where sire and dam are both crosses, no one upon the earth can venture to say what kind of animal you may breed. The old adage "Like getting like" does not apply here, I have seen scores of instances, and so have you to bear me out, if you think for a moment. I have seen instances of two animals, own brothers, so bred, as dissimilar in shape and character as animals can well be and be called horses—the one nearly sixteen hands high with corresponding size, the other positively a pony under fourteen hands, unlike either of the

parents, both having been reared together and equally well kept and cared for. Such instances are exceedingly rare, where one of the parents has been purely bred. Extremes in crossing should be avoided—such, for instance, as putting a very light mare, whether thorough-bred or not, to a heavy cart-horse. You are often likely, as far as my experience has gone, to get your colts unshapely and disproportionate. Numbers of good animals are bred out of deep-shouldered, quick-stepping, light cart-mares, and thorough-bred horses; indeed, this is a cross which I should decidedly recommend, provided always—as the lawyers say—both parents have action. And now, as I must say a word or two with regard to action, I cannot do better than introduce it here. Don't breed from any animal, sire or dam, that has not a fair share of it—it is a great desideratum—almost a *sine qua non*, espepecially if you breed with a view to sell. An Irishman once said there were three essentials necessary to make a good horse, and when asked to enumerate them, he said, "The first was action, the second action, and the third action." Of course I don't go so far as this, or mean to say that nothing else is necessary in a horse, but I do insist that greater attention should be paid to action than usually is. What I mean by action is not the up-and-down, knee-to-nose action, characterising what a facetious friend of ours once said of a horse that was exhibited at a neighbouring town, "All action and no go;" but that which comes from the shoulder as well as the knee. Nor must hind-leg action be overlooked. The hock must bend as well, if we wish all the movements to be harmonious. Gentlemen, this want of good and true action it is that renders an otherwise fine horse comparatively valueless, whether he be required for one purpose or another. It is no earthly use to show for sale a slovenly daisy-cutting brute to any person who is a judge (and they are plentiful now). Depend upon it, he will not buy him; in these fast days, men that can afford to pay for action and pace will have it if it is to be got. Another great essential in the selection of animals to breed from is *soundness*. By soundness I mean freedom from hereditary disease. Have no blindness. If it arises from cataract, this being the effect of constitutional inflammation at some time, it is too often hereditary. The accidental loss of an eye or eyes from external injury need cause no apprehension. Beware of curby hocks, spavins, or ringbones; these are diseases too often transmitted. Roaring and other diseases of the respiratory passages should be guarded against, particularly in the sire; the mare is seldom a roarer, but too often

broken-winded. I should not advise, in a general way, to breed from a badly wind-broken animal; but if otherwise very desirable, I should not so much object to this as to some other diseases, provided it was slight, as it is in the majority of instances the result of bad stable management. In making this exception I should recommend you to be careful in ascertaining if the progenitors were diseased in a similar way; if so, I say at once avoid it. Ages of the parents are by some considered of importance. I should, of course, prefer them not too old; but as long as they are vigorous, sound, and healthy, with unimpaired constitutions, I don't think a year or two matters much. Some of our very best turf horses have been bred from parents verging upon extreme age; but as a rule, I should not advocate breeding from both very old parents. Now as to the sire, I must warn you to be particular in the selection; don't be led away by any animal you may see trotted through the market with ribbons flying, carrying a fine coat and a lot of flesh, ill-shaped as he may be, provided he can be procured for a paltry sum. If you think it will not pay to have the services of a good animal at a fair price—just the difference of a pound, perhaps—take my advice, don't breed a colt at all. My opinion is, as I have before expressed it, in favour of pure-bred sires. What particular breeds are, then, best adapted for the mares we have in this locality? The thorough-bred, or blood horse, as he is sometimes called, must stand first, for he undoubtedly is the finest, grandest, purest type of all our breeds. His history it is not necessary to enlarge upon; suffice it to say that the great skill, perseverance, and judgment that have been exercised for generations in his breeding, have rendered him superior to all others in the known world. For his beauty of form, speed, and endurance, he stands unrivalled. He is sought after by the crowned heads and wealthy of all countries. Enormous sums are every day paid for him for exportation, especially by our continental neighbours. He is sent out to perpetuate his excellencies in our distant colonies. Our Yankee friends—much as they profess to hold us, our institutions, and everything English, in contempt—will condescend to believe that we are possessed of the best horses in the world, or they would not have given 3000 guineas for Priam, and nearly the like sum for Glencoe. Even in India, where the beautiful Arab is to be found in great purity, scores of our thorough-bred sires every year find their way there. As a sire, the thorough-bred horse need not be too large, or exceed sixteen hands; the big ones are often lumbering, and my experience tells me that the

symmetrical, stout, fair-sized horses, such as the Star of Erin, Willesden, Old Port, Kingstown—*cum multis aliis*—have done us more good than Bowstring, Careless, and others of that class. The necessity of action and soundness I have already insisted upon; symmetry and harmony of proportion should be sought for; the head should be sensible, with a bright clear eye, broad in the forehead, tapering towards the nostrils, which should be open and large, clean about the throat, and well set upon the neck—a very good judge once said that, if he were obliged to buy a hunter by being allowed to see but one part of him, he should choose that part to be the head—which should be arched, of fair length, and thick, but not too heavy. The neck of the stallion, like that of the bull and ram, affords a pretty good criterion of powers of constitution; the shoulders must be oblique and muscular, and light about the points; the chest I prefer rather round than narrow, provided he measures well; six feet is a fair average measure—more are under rather than over it, as far as I have seen. The narrow chest is often accompanied with thin shoulders (an objection to a horse in going down our Devonshire hills), which brings the fore legs too near together, and causes, in progression, the fetlocks to be interfered with. I have never seen a horse thick through the heart, as it is called, but he could endure and, in horseman's language, *stay*. The narrow-chested one may be faster, but, as a rule, he will be found at the end of one of our severe Devonshire runs with hounds—if a heavy weight be upon his back—not quite in his proper place. The back should be short, with a broad muscular loin, and if a little arched, all the better; and the back ribs strong and deep. He should have length from the pin to the tail, which should, to be compatible with beauty, set on in a line with the back. But this is a point hardly to be insisted upon, provided there be length from the pin to the hock. The fore legs should be, on the whole, short, but the arms muscular and long in comparison with the leg below the knee, which from that to the fetlock cannot be well too short; the tendons standing out and well defined; the knees and fetlocks should be large and look like joints; the pastern not too long or too oblique, but sufficiently so to give elasticity.

(*To be continued.*)

REPORT OF EXPERIMENTS MADE UNDER DIRECTION OF THE LORDS OF THE COUNCIL AS TO THE VACCINATION OF SHEEP, AND AS TO THE INFLUENCE OF SUCH VACCINATION IN PREVENTING SHEEP-POX.

By James F. Marson, Esq., F.R.C.S., Resident Surgeon of the Smallpox Hospital, and

Professor Simonds, of the Royal Veterinary College.

(*Continued from p.* 378).

Case 2.

"January 3rd, 1849.—Inoculated the second sheep, the lymph used for the purpose having been taken from the other sheep belonging to Mr. Ellis on the fifteenth day of inoculation. Four punctures were made; besides which some lymph was placed on a set of superficial scratches.

"4th day of inoculation.—Two of the punctures are slightly inflamed.

"5th day.—The other two punctures, and the scratches also, are inflamed.

"9th day.—The local inflammation has reached its height in all the places of inoculation. The constitutional disturbance is rather more than in the preceding case, but not sufficient to endanger the animal's life.

"10th day.—Papulæ are being formed, and *stigmata* exist near to the side of the punctures.

"15th day.—Vesicles are formed on the papulæ, from which, on the seventeenth day, a good supply of lymph was obtained."

This animal, like the other, gradually recovered, and on the 12th of February the two sheep were returned to Mr. Ellis, for Mr. Ramsay's inspection, and for any further experiments he might wish to try upon them.

From this time no further letters appeared in the public papers from Mr. Ramsay, on the subject of the vaccination of sheep, until the recent outbreak of sheep-pox in Wilts, when, as we have shown, he again appeared as the great advocate of vaccination to give protection to sheep against the disease; in which advocacy he was supported by his late assistant, Mr. Sprague.

There is one point in the letter of the last-named gentleman, addressed to *Bell's Weekly Messenger*, bearing date

October 22nd, 1862, which also requires to be alluded to, viz., that of his having obtained sufficient lymph from two calves for vaccinating nearly 300 sheep.

His words are—"I procured some lymph from a patient, and vaccinated two calves, that I might have a plentiful supply of matter. The whole of the sheep—about 300—were then vaccinated, and it was successful in all but about six or seven."

There surely must be some mistake about the quantity of lymph said to be yielded by these two calves. It has been found by Mr. Ceely, as well as by ourselves and others who have resorted to retro-vaccination, as we have elsewhere stated, that but a very scanty supply of lymph can be thus obtained. Mr. Ceely thus writes—"Take an abundance of humanised vaccine lymph from one of the finest and most productive vesicles ever seen, and if you succeed in retro-vaccinating the cow, you may, perhaps, be able to charge scantily a very few points from a vesicle which excites but trifling topical inconvenience." It is also an established fact that, in passing humanised lymph through the cow, the action of it has been materially retarded in its progress for several removes after being returned to the human subject.

There is also something very remarkable, in our opinion, in Mr. Sprague's success in bringing 300 sheep, excepting six or seven, in one vaccination under the vaccine disease. We presume that Mr. Sprague assured himself, by his own personal examination, of the fact that all the sheep, with the exceptions alluded to, had taken the vaccination, and that he has not given the statement on the authority of the shepherd. That such a thing was sometimes done we have proof, by a letter from Mr. Ellis, of Triplow, to Mr. Simonds, dated November 20th, 1848. In this communication Mr. Ellis says that "Mr. Hurrell had 400 sheep vaccinated by Mr. Ramsay, or by *others* under his superintendence, and that it was left principally with the shepherd to determine whether it took effect or not. Agreeable to an arrangement, Mr. Ellis would have sent some sheep from Mr. Hurrell's flock to the Royal Veterinary College, for experiment, but for his knowledge of the unsatisfactory way in which they had been examined after the vaccination, and, therefore, the impossibility of ascertaining whether the selected sheep had been successfully vaccinated or not.

Passing from the vaccinations of 1848, we have, in the next place, to direct attention to some experiments of the vaccination of sheep in 1862.

Shortly after the formation of the "Wiltshire Association

for Preventing the Spread of Smallpox in Sheep," it was determined by the committee to give trial to vaccination as a preventive of the disease, owing principally, as before explained, to the statements contained in the letters of Mr. Ramsay and others, and also to the strong condemnation of the system of inoculation by Mr. Overman. For this purpose six sheep were procured from Mr Pritchard, of Longcot, near Swindon. Two of these sheep were vaccinated on September 27th, by Mr. Parker, surgeon, of Shrivenham, and on October 9th they were forwarded to the farm of Mr. Church, of Aldbourne, where they were placed with some animals suffering from smallpox. Here they remained for nearly three weeks without giving any evidence of having contracted the disease, when they were removed to Mr. Hulbert's farm at Langley, in Berkshire. The remaining four sheep were vaccinated by Mr. Parker on October 8th, and he reports also with success.

On October 22nd these sheep were likewise sent to Mr. Hulbert's farm, where, on November 3rd, all six were *inoculated* by Mr. Parker. On the tenth day succeeding the inoculation one of the sheep died from the effects of the inoculated sheep-pox. Mr. Simonds saw these animals on November 18th (fifteenth day of inoculation), and found one of them suffering from confluent sheep-pox, and rapidly sinking; it died on the following day. The second sheep showed extensive local action from the inoculation, indicating ultimate sloughing; the eruption of papulæ was, however, but slight. The third had taken in both inoculated places, and had besides a free eruption on its body. The fourth had taken in both inoculated places, and had also a free eruption. The fifth was in the vesicular state of the malady. The last four named animals ultimately recovered.

We are not aware of any sheep besides these six having been vaccinated during the late outbreak of smallpox in Wiltshire, and it will be seen that the result does not essentially differ from that arrived at by our experiments.

In a former part of this report we have described the appearances which we have witnessed in every case of vaccination when satisfactorily performed, and which, we have said, agree with those mentioned by Mr. Ceely, who, in writing on "variola vaccinia," observes—"This disease is much modified in the sheep; it quickly passes through the several stages; lymph forms by the fifth or sixth day, and on the eighth the affection terminates. It differs altogether from the vaccine of man or the cow." With a view, however, of more fully elucidating the subject, we deem it

necessary to give the details of an experiment of the vaccination of sheep, which will not only show the peculiarities of the vaccine disease, but also that, even when developed to its fullest extent, it does not render the animals insusceptible to the action of the ovine virus.*

Experiment.

"January 20th, 1848.—Two sheep were vaccinated with fresh fluid lymph, furnished by Mr. Marson; six punctures were made in one animal, two on the inside of each thigh, and one on either side of the sternum. In the other, four incisions only were used for the insertion of the lymph.

"5th day of *vaccination*.—In the last-named sheep the disease has taken in all the punctures, but only in two of them in the other case. Small vesicles are developed; these are filled with a transparent fluid, and surrounded by a slight areola. The animals are in good health, the effects being but local.

"6th day.—The vesicles are larger and the areola is rather deeper in colour.

"7th day.—The vesicles are beginning to decline; the areola is less visible.

"8th day.—Crusts exist on some of the places of vaccination; they have, however, fallen from most of them, leaving a slight blush of redness on the spots.

"February 1st.—These sheep were inoculated with some *ovine lymph* which was taken on November 15th, 1847, and was consequently about ten weeks old. They both contracted variola; and although the progress of the disorder differed but little in either animal, we purpose to give the details in full, and shall name one sheep C, the other D.

"*Sheep C.*

"5th day of ovination.—Two of the punctures are inflamed, and on the inner side of one thigh a stigma is present near to the place of inoculation.

"6th day.—The inflammation surrounding the punctures is increasing.

"7th day.—The effects are as yet local. The health of the animal is undisturbed.

"8th day.—The deep-red dye of variolous inflammation is passing away; the surface of the ovinated places is depressed, and a rose-coloured efflorescence has shown itself on various parts of the body.

* Simonds on 'Variola Ovina,' page 143 et seq.

"10th day.—The efflorescence has disappeared, and here and there papulæ can be felt.

"12th day.—Vesicles are forming on the inflamed incisions. The papulæ are stationary, from which we infer that they will be removed without passing through their several stages.

"14th day.—The inoculated vesicles are well developed, and we are able to charge several points; the fluid is limpid, but not very viscid. Branny scales are falling from the surfaces of the imperfectly matured papulæ.

"16th day.—Patches of whitened cuticle partially adhere to the sites of the inoculation; a small quantity of purulent matter encircles them, and the cutis is beginning to ulcerate.

"20th day.—The ulcers are superficial, and have a healthy appearance.

"*Sheep D.*

"4th day of ovination.—One incision on the side of the sternum, and another on the postero-inferior part of the abdomen have taken.

"6th day.—The inflammation excited by the virus has spread around each incision, and attained the size of half-a-crown.

"7th day.—No further increase of the inflammation has taken place, but an eruption has broken out, being chiefly confined to the upper and inner parts of the limbs. A febrile state of the system also exists, and the animal refuses food.

"8th day.—With the exception of the ovinated places being umbilicated, there is very little change in either the local or constitutional symptoms.

"10th day.—The patient's health is improved, the diffused red-coloured eruption continues, but no papulæ can be detected.

"13th day.—The skin has regained its normal condition, with the exception of the places of inoculation, which are covered by blanched epidermis, but no lymph can be collected from beneath it.

"22nd day.—Since the last report the cuticle has been desquamated in scabs of a dark-brown colour; the exposed sores are fast healing."

It scarcely becomes necessary that we should repeat that fresh investigations have substantiated the conclusions which we arrived at in 1848 of the inutility of vaccination. Experiments of the vaccination of sheep are worth but little unless tested by the counterproof of inoculation.

(*To be continued.*)

PLEURO-PNEUMONIA IN AUSTRALIA.

The nature and best means of combating the fatal disease known as pleuro-pneumonia are, at the present time, exciting the liveliest interest throughout the different colonies of Australia, chiefly in consequence of the publication of the views of the Royal Commission appointed by His Excellency Sir Charles Darling.

The *Australian Press*, alluding to the subject, says—

"The report of the Royal Commission appointed by the Governor of Victoria to inquire into the origin and nature of the disease known as pleuro-pneumonia has been recently published in Melbourne, and, if reliable, the public generally have been under a great misapprehension as it regards the contagious nature of the disease. We say so because this report strikes at the very root of all the legislative action which has been taken in this colony and elsewhere. The gentlemen who composed the commission were—a professor of the Melbourne University, and three medical men of the highest repute in that city. Their investigations have extended over a year, during which they obtained information by means of circulars, addressed to upwards of four hundred owners of cattle; by the examination of witnesses who had opportunities of observing the disease; and lastly, by the most rigid experiments. Healthy cattle were imported from Tasmania, where pleuro-pneumonia had not appeared, and a suitable piece of ground to depasture them on was found with some difficulty. The cattle were here, say the commissioners, 'placed under the charge of a herdsman, for whom a hut had been built on the land, and whose instructions were not to leave the ground either by night or day during the course of the experiments. Water holes were dug, and sheds were erected for certain of the cattle while under experiment, and every precaution which appeared necessary was taken to prevent any external interference with the result of the experiments.' The healthy cattle having been carefully examined to ensure their freedom from disease, and some diseased cattle suffering from pleuro-pneumonia having been obtained, and securely kept from the others, the commissioners commenced their experiments on the 19th March last, the first and principal object being to determine whether pleuro-pneumonia could be communicated to sound animals by the secretions or exhalations of diseased ones. The following is the list of experiments as given by the commissioners in their report:

"'Four experiments—Consisted in insertion of nasal mucus of diseased animals into the nostrils of sound ones, including one case of a cow in low condition, immediately after bloodletting.

"'Two experiments—Consisted in insertion of bronchial exudation of diseased animals into nostrils of sound ones.

"'Four experiments—Consisted in exposure of healthy beasts to the breath of diseased ones, so that the former must breathe the breath of the latter, including one case after a copious bloodletting. (Some of these were rather serious experiments, as the supply of diseased animals was kept up for a considerable time as the subjects died.)

"'Two experiments.—Introduction of saliva of diseased animals into mouths of sound ones.

"'One experiment.—Injection of blood of diseased animals into subcutaneous areolar tissue of sound ones.

"'Two experiments.—Supply to healthy animals of water from which diseased ones had been allowed to drink.

"'Two experiments.—Unrestricted communication of healthy with diseased animals, including one case in the open air, and one case in which the animals were both confined in a single stall of a shed.'

"And the commissioners give the following as the practical result of their observations:

"'We will not here anticipate details further than to state that in not one single case has the disease been communicated to any healthy animal under experiment.

"'We regard this result as of very great practical importance, for, without assuming the absolute impossibility of pleuro-pneumonia being conveyed from a diseased to a healthy animal, it is quite evident that in the state in which the disease now exists in this colony such consequence must at least be of extreme rarity, if it occur at all, as the animals on which the foregoing experiments were performed have been subjected to very exaggerated tests, increasing the liability of infection far beyond what could occur under ordinary circumstances.

"'This result of carefully conducted experiments, having for their object the direct communication of pleuro-pneumonia from the diseased to the healthy animal, clearly shows the fallacious character of those experiments which have consisted in inoculating healthy animals and causing them to be kept in company with other animals suffering from pleuro-pneumonia. In order thereby to judge of the efficiency of the supposed protecting means, such experiments as the last have proceeded upon two assumptions—first, that pleuro-

pneumonia is readily communicated from a diseased to a healthy beast; secondly, that the (presumed) healthy animals were quite free from any risk of having previously acquired germs of the disease.'

"And again, at the conclusion of their report—

"'The result of our inquiry appears, however, to have a clear and direct practical bearing; and we hope that our labours will be found to have supplied reliable information for the Government of the colony, tending to discourage legislative interference with owners of cattle; and inasmuch as we having now proved by our carefully conducted experiments that the disease is not likely to be communicated by any of the means formerly supposed to spread the contagion—namely, the inhalations of the breath of diseased beasts, contact with them, drinking from the same vessel, contact of the secretion from the mouth and nose of diseased beasts with the corresponding parts of healthy animals—we point out that the action of Government in declaring certain districts clean or unclean, inspecting stock supposed to be diseased, destroying diseased animals, and obstructing the transfer of cattle from one district to another, is unnecessary and undesirable, as only entailing loss and inconvenience, without any reasonable probability of stopping the spread of the disease. Before our experiments were made such action would, of course, be a proper preliminary precaution for the protection of the holders of clean stock in the colony.

"'Our investigations, showing the innocuous character of the flesh for food when having the appearance of ordinary meat in the butcher's shops, remove the necessity for new legislative action in this respect also.

"'In all these our conclusions it is satisfactory to find ourselves in accord with the most recent information laid before the Imperial Parliament.

"'We annex to this report the details of experiments alluded to above.

"'Frederick M'Coy, Chairman,
Thos. Black, M.D.,
James T. Rudall, F.R.C.S.,
Thomas Shearman Ralph, M.R.C.V.S.,
England.'"

Among the various letters which have been written in opposition to the views of the commissioners we find the following.

The *Australasian*, in the following able article, has shown

how the most useful remedies to prevent contagion are stultified by the incapacity of the members appointed to form the commission to report on the best means to be adopted to stop the spread of so virulent a disease.

"The pleuro-pneumonia commissioners have expended the £1250 voted by Parliament, and have put their names to a report which we received with suspicion at the time, and which the country would have been much better without. And, as for the commissioners themselves, they most assuredly have not risen in the estimation of the public by the part they have played in this unfortunate piece of business. A Royal Commission is usually composed of men of full capacity and undoubted integrity, whose conclusions and dicta have weight accordingly. This report we speak of was, therefore, accepted by most people as an altogether trustworthy document, and the disease our commissioners undertook to investigate the nature of has been proclaimed far and wide to be non-contagious. In the adjoining colony of South Australia, from which our cattle have been shut out by legislative enactment, but into which some infected animals have, nevertheless, managed to pass, this is the view taken of the report, and we find an article in the leading journal there declaring to its readers that the disease in question is covered with mystery; that neither science nor experiment has been able to account for it, coming and going without apparent cause, amenable to no remedial measures, running its course and then passing away; but that something is gained when we learn it to be non-contagious, 'even though no precautions can prevent it, and no carelessness can increase it'—and all because our learned commissioners said so in their report. But what are the real facts of the case? Before the report could have been written one of the few animals experimented on was killed, suffering, it was said, from quite a different disease; but, according to those who ought to know, a victim to true pleuro-pneumonia, and, hurried as was the publication of the report at last, this had scarcely seen the light when another of the animals was killed in an advanced stage of the disease. These are acknowledged to; but it is whispered that yet another was buried one morning at an hour when honest folks are mostly in their beds. Then a fourth has been killed since the sale under very doubtful circumstances, while a fifth appears to have had one lung destroyed by this or some similar disease, and to have only partially recovered in other respects. The whole of the cattle have not been traced out as yet, but a proportion of the seventeen head experimented on has been accounted for quite sufficient to

show that the commissioners have proved the disease to be highly contagious, even though the Tasmanian cattle were unusually hardy, and were long in taking it.

"Of the mode in which the experiments were conducted we know but little, for witnesses, whether professional or otherwise, were carefully excluded from the sheds. If information had been the object, why not have invited the co-operation of veterinary surgeons and stock-owners, who have specially studied the subject, and who volunteered their assistance? Why not have appointed Dr. Thomson on the commission when a vacancy occurred, and when he was most anxious to prove the truth or fallacy of his opinion, that this disease is almost identical with measles in the human being, a point of the utmost importance to the public? Or why not have allowed Mr. Brock, one of our first and most energetic commissioners, to take his seat amongst them after he had been invited by the chief secretary to act? And lastly, when the experiments were deemed to have been carried far enough, why not have had all the remaining animals slaughtered and their viscera examined by as many veterinary surgeons as were inclined to go to the ground, instead of selling them for a mere trifle, and with a puffing advertisement, as beasts that would not sicken under the strongest provocation? All these things have been noted from time to time, and they go far in support of assertions made at first, that this commission was appointed to arrive at a foregone conclusion. If such should, by any possibility, have been the case, the commissioners are open to the grave charge of being found out; but, taking the most favorable view we can of their actions and intentions, they have, at the best, sadly managed their business; and the report issued to the world at large, with the Government *imprimatur*, and therefore on the credit of the colony, is nothing more nor less than an untruth, with circumstances eminently calculated to mislead the unwary."—*Australasian*, Feb. 25th.

Translations and Reviews of Continental Veterinary Journals.

By W. Ernes, M.R.C.V.S., London.

ACTION OF THE OIL AND WATERY EXTRACT OF LOLIUM TEMULENTUM (DARNEL GRASS) ON THE HORSE AND OTHER ANIMALS.

By M. C. Baillet, Professor of the Imperial Veterinary School at Toulouse, and M. Filhal, Director of the Medical School at Toulouse.

Second Part.

(*Continued from p.* 337.)

The watery extract obtained from the *Lolium temulentum*, after having exhausted it with ether, the action of which was so violent on cats and dogs, even so as to cause speedy death in several of them, has been almost inactive when given to the solipeds by the mouth. Several experiments have constantly given all but negative results, although we varied the doses, and, as much as possible, also varied the conditions under which the animals were placed.

On the 22nd of March, 1862, at five minutes past one, we gave to an old ass all the liquid obtained from two kilogrammes of the farina of the *Lolium temulentum*. After its administration a little drowsiness was observed; the animal held its head low, the eyes were half closed, and from time to time his legs seemed to give way, as if about to fall, but that would wake him up, when, suddenly straightening himself, he fell into the same drowsy state as before, and a repetition of the like movements would again take place. During these effects the circulation was found to be slower than usual.

The symptoms which we have just described began to appear about a quarter to three o'clock, and continued for about an hour and a quarter. At four o'clock nothing was observed that could be attributed to the administration of the extract. In this experiment the action produced by the watery extract, though not so well defined, was, however, evident enough, so as not to mistake the cause that had provoked it. On the contrary, they were *nil* in another case in which an ass was made to take the whole of the precipitate, to which alcohol had been added, of 4500 grammes of the farina of the lolium, previously exhausted by ether; notwithstanding this precipitate, retaining the active soluble principle, had acted the evening before with great intensity on a

bitch, to which a dose equal to 500 grammes of the farina had been given. But among my experiments there is one which establishes better than any other the fact of the watery extract being much weaker on the solipeds, when given through the mouth, than the yellow substance which contains the oil extracted from the grain by ether. This induces me to make it known with all its details.

On the 21st of March, 1862, we gave an old mare the oil extracted by ether from three kilogrammes of the lolium. To this the animal succumbed the same night. Some time previous to this the same mare had taken the watery extract of three kilogrammes of the lolium previously exhausted by ether. The following are the notes of what took place:— On the 15th of November, 1862, the mare having been selected, and her condition verified, which was tolerably good, though she was broken-winded. Eleven inspirations and thirty-two beatings of the heart were counted per minute. At half-past eleven a dose of the above-described watery extract was administered to her. From that time till twelve o'clock nothing particular occurred, except some slight twitchings of the lips and eyelids, and an abundant salivation, with deglutitions provoked by the saliva, also a sort of balancing motion backwards and forwards and sidewards, without moving the legs. The above-described movements continued, also the deglutitions, with foam at the commissures of the lips in abundance, sometimes stringy, at others frothy, and of a whitish colour. The mare had several fæcal evacuations of a soft nature; she also staled frequently, and the quantity of urine was abundant at each time. Slight tremors were observed from time to time in the olecranian muscles of the left side, particularly after the leg had been moved. The respiration seemed to become somewhat slower, being only nine or ten in the minute. The circulation, on the contrary, was slightly increased, thirty-seven pulsations being counted in the minute. On the other hand, there were no soporific signs, the animal seemed very attentive to everything about her, and was even inclined to feed. All these symptoms, though not very prominent, lasted from twelve until half-past three; the mare then began to eat some hay with great eagerness, after which she remained quiet, without betraying any sign of the presence of any toxic substance in her economy. Thus the same mare, which was to die from the effect of a dose of the oil extracted from three kilogrammes of the *Lolium temulentum*, six days after, resisted the effects of a similar dose of the watery extract without hardly showing any symptoms of serious dis-

turbance in her organic functions. It is therefore with just reasons that we have stated above that the watery extract, which is so fatal in the carnivora, is almost inert in the solipeds. Up to the present time we have not been able to recognise the cause of this singular anomaly, of which we shall find more instances when we come to study the effects of the Lolium on the pig and other domestic animals. However, latterly we have supposed that it may be from the active principle of the watery extract not being entirely absorbed when given through the alimentary canal, on account of its being mixed with too great a quantity of ingesta in the stomach and the intestines, or perhaps that it becomes more or less altered by the contact of these alimentary substances in the interior of these organs. This thought was suggested to me by the symptoms observed, which were produced by an attempt we made to cure tetanus in an ass by the watery extract of the *Lolium temulentum*. In this case there was decided trismus present, which rendered the administration of medicine by the mouth impossible. The watery extract of two kilogrammes of the *Lolium temulentum* dissolved in warm water was injected per rectum. The malady took its course, but to the symptoms of tetanus were added some of the phenomena which have been observed in the dog when under the influence of the same drug; and, moreover, we have found at the autopsy all those lesions which are always present in the carnivora consequent on the absorption of the active principle of the watery extract of the lolium when given in large doses. We come to the conclusion that the extract had become absorbed in the rectum, and this suggested the idea of making a fresh experiment, and to poison a horse by injecting the watery extract per rectum.

On the 27th of July, 1863, an old mare, affected with chronic laminitis, was selected for this experiment. From twenty minutes after seven until half-past twelve o'clock two decilitres were injected into the rectum, which had been previously cleared out by the hand, every half hour, until the whole of the aqueous product of five and a half kilogrammes of the grain of the *Lolium temulentum* extracted by ether had been used. During the whole time, and for some time after, the mare was carefully watched, and only a very small portion was seen to be rejected; indeed, so little was the quantity that it could not be considered to have diminished the dose administered, except only in the smallest amount. Be this as it may, the mare did not exhibit any symptoms on that day nor up to the 30th. This new failure left the ques-

tion as to the absorption in the alimentary canal of the solipeds unsettled; we therefore decided to try to solve it by injections into the veins. The first trial in this novel way of experimenting did not give us very conclusive results. We have, in fact, been able to inject into the jugular vein of a horse of middle size the aqueous product carefully filtered of two kilogrammes of the *seed* of the lolium, without producing any effects except a slight tremor in the regions of the elbow and the stifle, and a remarkable increase in the circulation, the pulse having risen from 35 to 85 per minute. But the tremors did not continue half an hour, and in the evening, from three to four hours after the injections, the pulse had recovered its natural state. On the whole, the horse was at most indisposed on the day of the experiment, but showed no derangement of general health afterwards. It was not the same with another soliped of the same species, on which a second attempt at injection was made of the same product, but in larger doses. The history of this experiment is one of the most curious among those we have made.

(*To be continued.*)

ROYAL COLLEGE OF VETERINARY SURGEONS.

SPECIAL MEETING OF THE COUNCIL FOR THE ELECTION OF OFFICERS, MAY 30TH, 1865.

PRESENT:—Professors Spooner, Simonds, Varnell, and Gamgee, Messrs. Broad, Brown, Cartledge, Dickens, Greaves, Harpley, Harrison, Hunt, Lawson, Mavor, Moon, Pritchard, Robinson, Silvester, Wilkinson, Withers, and the Secretary.

It was moved by *Mr. Wilkinson*, and seconded by *Mr. Lawson*—

"That Mr. R. L. Hunt, the late President, take the chair."—Carried.

The minutes of the preceding meeting were then read and confirmed.

The election of a President for the ensuing year was next proceeded with, when it was moved by *Mr. Robinson*, and seconded by *Mr. Mavor*—

"That Professor Varnell be elected President."—On the

ballot being taken, Professor Varnell was declared unanimously elected.

Professor Varnell, having taken the chair, returned thanks for the honour of his election.

It was moved by *Mr. Silvester*, and seconded by *Professor Gamgee*—

"That a vote of thanks be given to the late President, Mr. Hunt, for the very able and courteous manner in which he had discharged the duties of his office during the past year."—Carried.

Mr. Hunt returned thanks, and at the same time handed to the President the official key of the Royal Charter and College Seal.

The election of six Vice-Presidents was then proceeded with. The following gentlemen were proposed:

Mr. C. Hunting, by Mr. Cartledge.
— Robert Lucas, by Mr. Lawson.
— William Burley, by Mr. Silvester.
— William Field, Jun., by Mr. Robinson.
— W. Thacker, by Mr. Harrison.
— James Broad, by Mr. Wilkinson.
— James Rose, by Professor Simonds.
— W. Wheatley, by Mr. Pritchard.
— J. Barford, by Mr. Dickens.

The result of the ballot was, for—

Mr. Burley . . .	19	Mr. Rose . . .	11
— Lucas . . .	17	— Broad . . .	8
— W. Field, Jun. .	17	— Wheatley . .	5
— Thacker . . .	16	— Barford . .	5
— Hunting . . .	14		

Whereupon Messrs. Burley, Lucas, Field, Thacker, Hunting, and Rose, were declared duly elected.

The election of a Treasurer, in the place of the late Mr. E. Braby, was next proceeded with.

It was moved by *Mr. Wilkinson*, and seconded by *Mr. Lawson*—

"That Mr. S. H. Withers be elected Treasurer."

On the ballot being taken, Mr. Withers was declared to be duly elected.

It was moved by *Professor Simonds*, and seconded by *Mr. Cartledge*—

"That Mr. Coates be re-elected Secretary and Registrar."

On the ballot being taken, Mr. Coates was declared to be unanimously elected.

Previous to the termination of the meeting,

It was moved by *Mr. Dickens*, and seconded by *Mr. Silvester*—

"That a letter of condolence be forwarded by the Secretary to the family of the late Mr. E. Braby, who had so ably officiated as Treasurer, and won for himself the esteem and friendship of every member of the Council."—Carried.

By order,

WILLIAM HENRY COATES,
Secretary.

ROYAL SOCIETY FOR THE PREVENTION OF CRUELTY TO ANIMALS.

THE annual meeting of this society was held on Saturday afternoon at Willis's Rooms, St. James's; the Earl of Harrowby in the chair. The report, read by the secretary, gave a detailed account of the operations of the society during the past year, for checking cruelty to animals by punishing offenders, and the adoption of merciful measures for the better treatment of cattle, &c. Similar societies, it was stated, were spreading on the Continent, and it was hoped that more in future would be accomplished in Spain, where the society had met with considerable obstructions, owing to the national customs of the people. In this country the usefulness of the society was fully acknowledged by the manner in which its agency was called into operation. It was working in every part of the empire, and, in consequence of the heavy expenses daily incurred, the committee made an earnest and confident appeal to the public to enable them to carry on the work of humanity which they had in hand. The noble chairman referred in terms of congratulation to the growing interest taken in the operations of the society. He hoped there would be another "donkey show" this year; it was a very interesting exhibition, and did a great deal of good among the costermonger class, who were more likely to be influenced by the prizes offered to them than by literary efforts. As regards vivisection it was to be hoped that it would be speedily discontinued, as being unnecessary. The prize on this subject was awarded to Mr. Fleming, veterinary surgeon in the army, and the second prize to Mr. Markham. A motion for the adoption of the report was moved by Mr. Mackinnon, M.P., seconded by Capt. H. Bethune, M.P., and agreed to. The Rev. Prebendary Jackson moved a resolution stating in effect that though much had been achieved, the active exertions of the society are still required. A great deal of cruelty was still practised in driving cattle through the streets, and the condition of the London slaughter-houses was a disgrace to the country. Addresses in illustration of the working of the society were also made by Mr. D. Mocatta, Mr. A. Smith, and the Marquis of Townsend, after which thanks were voted to the gentlemen who acted as judges in awarding the prizes, and a com-

mittee was appointed for the ensuing year. His lordship then distributed prizes, consisting of the well-known work, "Our Dumb Companions," to several young gentlemen for essays on kindness to animals. In reply to a question from Mr. Curling respecting a legacy of £10,000 from the late Viscountess D'Alte, to be expended in the prevention of cruelty to cattle in slaughter-houses, which on appeal to the Lord Chancellor had been declared void in law, the Chairman stated that they had a decision in their favour by one of the first judges of the land, and they therefore did not feel justified in accepting the offer that had been made as a compromise. They had acted to the best of their judgment upon the facts laid before them. A vote of thanks to the chairman concluded the proceedings.

LIVERPOOL VETERINARY MEDICAL ASSOCIATION.

OFFICIAL REPORT.

THE usual quarterly meeting of the above association was held at the Medical Institution, Hope Street, Liverpool, on the evening of Friday, the 12th of May, when the following gentlemen were present:—R. Lucas, Esq., President, E. A. Friend, J. Simpson, T. Proctor, C. Twist, J. Brydon, R. Chambers, T. Harwood, J. Leather, P. Taylor, President, and A. L. Gibson, Hon. Sec. to the Lancashire Veterinary Medical Association, Thos. Greaves and W. Haycock, Manchester; Wm. Dobie, Birkenhead; J. Storrar, Chester, and the Secretary.

The President, on rising, announced to the meeting the death of Mr. George Kirkham, West Derby, a member of this association, and an active and successful practitioner in the immediate neighbourhood, one well known to them all, and only known to be respected.

The minutes of the last meeting having been read and confirmed, the President called upon Mr. Friend, who read the following paper:

On the Legal Responsibility of Veterinary Surgeons.

I approach the subject selected for discussion this evening with feelings of great diffidence. Not that I have any doubt of its importance, or any fear of your undervaluing its necessity and worth as connected with our profession, but simply because you may perhaps expect from me more information or closer reasoning than I am able to advance. However, I hope that my paper will be only the prelude to a considerable amount of discussion among those present, then, however imperfectly the subject may have been introduced by me, it will have assisted us in spending a not unprofitable evening.

In addressing you on the above question, I assume and sincerely believe that I am speaking to a body of men who are too honorable to wish to screen themselves from any responsibility which legitimately and fairly belongs to them, either as members of society generally or as specially appertaining to them as members of a highly important profession.

My observations will be directed principally to the mishaps or errors which will occasionally occur in the practice of every veterinary surgeon, either by himself or his servants, however well conducted it may be in a general way.

You are all aware that there are persons of so litigious a disposition that they will seek occasion to fasten blame upon, and to make profit out of, cases or operations that have been undertaken for their benefit, and which have really been conducted with all skill and carefulness; taking advantage of any untoward circumstance that may have arisen, although possibly such an one as could neither have been foreseen nor avoided by the practitioner. The first thing a person of this description does is to endeavour to obtain from other professional men an opinion adverse to the one held by the person originally employed, as to the necessity of the operation performed, the manner of conducting it, or the result of it. And you also know that, unfortunately, he generally succeeds in this, and the veterinary surgeon originally employed often suffers in pocket or reputation, or, it may be, in both.

It therefore becomes us to ventilate this subject both carefully and deliberately; but, at the same time, fearlessly, so as bring out all its salient points, and to endeavour, as far as possible, to agree in principle and opinion upon all such matters as usually form the subject of litigation as applied to veterinary surgeons.

I sincerely hope that these associations will be the means of promoting an increased amount of good feeling amongst us, and that our frequent interchange of opinions and ideas will cause us to look more from one stand-point of view in all cases, and particularly those which affect the reputation of the members of the profession generally. There ought to be, at any rate, a very near approximation, if not a perfect union of opinion on all these subjects. We should ever cultivate a delicacy of feeling towards our professional brethren, and use great guardedness of expression in cases where we are called upon to speak of another practitioner, especially in such matters as are now under consideration.

As one of the most frequent mishaps that occur in our practice, and one which is almost invariably attributed by our employers to want of skill on the part of our servants, or to gross negligence in the performance of the operation, we will first take the case of a horse alleged to have been "pricked" in shoeing, coupling with it that much more frequent and equally dangerous disaster when the foot is, as it is commonly called, "nail-bound." This latter, in fact, I consider to be the more dangerous accident of the two. The nail may be driven directly into the sensitive foot with little more danger sometimes than occurs from the puncture of a lancet

for the purpose of bleeding; but the other generally involves a much more extensive evil. The laminæ are complicated in the matter, and an equally vascular and more sensitive tissue is affected; and there is then no outlet by which the pus, when formed, can escape.

Now there are many circumstances connected with the shoeing of horses which might render this accident, comparatively, an excusable one. The horn in which the nails should be driven may be much broken away, and compel the necessity of driving the nail higher up into the crust, and nearer to the sensible laminæ than prudence would otherwise warrant. Or there may remain in the hoof a small portion of a broken nail, so imbedded as to escape notice in preparing the foot, and which, in driving the fresh nail, may divert its course, and so cause the accident; or there may be a morbid thinness of the crust altogether sufficient to render the operation both difficult and dangerous; or the nail itself may split in the act of driving it; or the horse himself may contribute to bring about the accident by his restlessness and impatience during the operation, or even be the direct and actual cause of it by a sudden jerk of the foot at the moment that the nail is being driven home; and there may be other causes which may operate in bringing about the evil.

But I prefer to take for example a case in which none of these excusable exemptions are present, and in which I believe, after all, these accidents do most commonly occur, namely, in a moderately good foot for shoeing. In the case of a decidedly bad foot you know that our men take extraordinary pains to prevent injury in driving the nails; but in the one now supposed they are apt to consider that ordinary attention and skill alone is sufficient to conduct the operation harmlessly; and I think that I have found in my practice that a pretty good foot is oftener the subject of such a casualty than others. Not that the men have omitted to use such ordinary care and attention as it behoves them to take, but that extraordinary and, fairly speaking, uncalled for attention may not have been displayed.

It is such a case as this that I wish to put before you. An indifferently good foot is lamed in a veterinary forge in shoeing, and the horse becomes useless to his owner in consequence. The cause of lameness is evidently in the foot; the owner becomes dissatisfied, often indignant, and sometimes so much so as to send the horse to another veterinary surgeon for examination, generally wishful that such examination should result in a verdict that the animal has been pricked.

If time enough has elapsed the examination will generally exhibit a formation, or the tendency to a formation, of pus in the direction of one of the nail-holes. It may have been a *bonâ fide* prick with the nail left in; it may have been a drawback; or the nail may have been driven into too close a proximity to the sensible laminæ and sole. Now, under these circumstances, what is the duty of the veterinary surgeon called in to examine the case? What is the

duty of the veterinary surgeon who shod the horse? What are his moral obligations under the circumstances in which we will suppose that damage accrues to the owner of the animal from loss of service and deterioration of value? And, lastly, what are the real or supposed liabilities of the veterinary surgeon, legally considered? and what are the best means of defeating a claim made upon him which he considers unjust and unreasonable?

It may seem presumptuous in me to attempt to dictate to you in these matters; but I wish you not to take my *ipse dixit* at all. I am only endeavouring to place the subject before you so that you may examine it in all its details; and I assure you I feel that without your kind forbearance for my shortcomings and indulgence to the faults of my reasonings, I shall indeed repent the attempt I have made.

I will honestly give you my opinions. Disagree with them altogether if you please, or modify them in any way you think proper; but let us endeavour to arrive at some conclusions in which we can all claim an interest. First, then, what is the duty of the veterinary surgeon who is called upon to make an examination of the horse's foot said to have been injured in his neighbour's forge? Gentlemen, you all well know that accidents of the kind I am describing are part of the risk inseparable from the handicraft of shoeing. They have happened in my forge; they have happened in yours. They have occurred, or they will occur, in the forge of every one who establishes that branch of business; and they are more especially liable to occur in the forges of gentlemen whom I am now addressing. The horses we operate upon generally carry so much iron, do so much work upon roads of the worst description for the feet, are subject to so much wear and breakage of the horn, and the shoes have to be nailed so much higher up the crust of the hoofs, as to render the work in our forges one of much greater danger than in the forge of a country practitioner.

I expect you will all agree with me as to the fact that there is this risk which I have noticed, and that no skill or attention on our parts individually will at all times avert it. We provide skilful workmen, we pay them adequate wages, we bestow such a general supervision of the work of the forge as we deem necessary for carrying it on successfully; but there is, nevertheless, a risk, and a mishap will occasionally occur. Who is to bear the loss accruing therefrom? I do not, and I apprehend none of you pretend to insure the perfect safety of the operation of shoeing at a money value for the risk. I should very well like to do so even at a very moderate premium, for, after all, the accidents are so unfrequent that I am sure the insurance would be profitable. Then, bearing these things in mind, with other good and substantial considerations which I fully anticipate we shall hear from you to-night, comes in the contemplation of the duty of the examining veterinary surgeon. Here is needed that delicacy of feeling, that exquisite tact, and that guardedness of expression which so happily belong

to some members of the profession known to me. They endeavour to soothe the angry feelings of the offended person; they place before him such a common-sense view of the case as, when divested of prejudice and jargon, it really possesses; and he goes away satisfied, it may be, that he has no well-grounded cause of offence against the man he has employed. I know that this has been the case in Liverpool, where anger has been subdued and law averted owing to the admirable tact and kind feeling of those who are now before me. All honour be to them for their attachment to that grand and Divine precept, "Do unto others as ye would they should do unto you."

Next what is the duty of the veterinary surgeon in whose forge the accident happens? I must touch lightly on this question. I have so good an opinion of the profession generally that I think almost any one of our brethren would be extremely anxious to remedy the evil at as little inconvenience and expense to the owner as possible. And bearing in mind the sublime principle I have just enunciated, I may safely leave this question to the guardianship of each man's own conscience.

Then comes the important question of our legal liabilities. Oliphant, on the law of horses, is exceedingly meagre on the subject of veterinary surgeons and their liabilities. He gives only one case of trial on the subject now before us, and that condensed from the *Veterinarian* for February, 1846, where it is much better reported. That is the case of "Collins *v.* Rodway." This case, after all, I consider a very unsatisfactory one; but as Oliphant selects it as being one in which he says "the rule of law as to the extent of a farrier's liability in shoeing a horse is fully and clearly laid down by Chief Baron Pollock," I select it also.

(The case was here read and commented upon.)

Here the chief value of the case appears to me to be the verdict, because all this has been said before—in other words, perhaps, but certainly to the same effect. But it may be well to remember that there is such a case resulting in such a verdict. I am of opinion, however, that, after all, we must depend more upon our mutual kindness and co-operation as a body than upon the uncertainty of the law or the decision of a jury.

I will now give you a case occurring in my own practice in Liverpool, in which a person attempted to extort money from me for an alleged injury to his horse in shoeing, and which was really without any foundation whatever, inasmuch as the horse was not shod at all on the foot in question at the time stated. It will serve to illustrate the kind of person fond of litigation, and the necessity of a most careful and guarded examination of a case which involves the reputation of a neighbour. But more particularly I want to recommend to you the course I adopted on that occasion, and one which I always endeavour to induce my friends to adopt who may be involved or likely to be involved in a suit at law. I mean that of arbitration, in which, when properly conducted, I consider the real facts of any case are more likely to be elicited than amidst the

jargon and paraphernalia of a law court. There is often more patience evinced in conducting it, and a more thorough acquaintance with the nature and value of the facts elicited which bear upon the particular case in question, and I think less ill feeling engendered between the parties at issue, besides the great advantage of less time being occupied than by the tedium of the law and the disagreeable publicity which it involves.

(The case was stated at length, and letters read.)

Now here was a case in which it might have been difficult to establish my non-liability in a court of law, as my adversary's witnesses tried hard to establish a case against me. I think I need scarcely add that the person employed to make the examination of the foot was not a veterinary surgeon.

One more case, and I turn to this with great pleasure, because I consider that in this case the verdict of the judge was entirely produced by the weight of the opinions given by veterinary surgeons on the trial. I refer now to the case "Wright *v.* Denson," tried in the Manchester County Court, July 25th, 1857.

(A part of it read.)

I feel persuaded, gentlemen, you will all agree with me that the evidence in this case was strictly in accordance with the practical experience of us all, and given for a cause and in a manner that reflects great credit upon the witnesses.

Amongst other things which, in general practice, involve danger, I may mention the giving of draughts or drenches to horses. There is one case of this recorded to which I wish to call your attention, viz., "Fisher *v.* Matthews,"—*Veterinarian* 1838; page 452.

(This case was partly read and commented upon.)

This, again, I consider to be a case in which we ought to be all of one opinion. I have seen many instances where medicine of this kind has been administered in the most careful and judicious way, and yet some of it has gone into the trachea. And here, again, the animal may be the indirect or direct cause of the accident. His obstinacy in refusing to swallow often produces this misfortune, or in other cases, the misadventure is entirely his own, as much so as it is ours when the same casualty happens to us where no force has been employed. I wish to state, once for all, that I would not uphold any wilfully stupid manner of giving medicine, or bungling manner of performing operations; but where the usual course is taken, or where even it is different from our usual practice, yet if it is one which is adopted by the person sued, and successfully carried on in a general way, I think we ought to support him. I will attempt to illustrate this by referring to a case, "Hopkinson *v.* Thomas," tried at Liverpool. (See *Veterinarian*, 1839; p. 481.)

(The case was here read and commented upon.)

There is yet another casualty which may occur in any man's practice, and which has been the subject of litigation. Here is one case.

(Quoted from *Veterinarian*, 1839; page 611.)

Amongst other cases which have occupied the attention of the courts of law is one in which an accident occurred to two horses while being taken home by a servant of the defendant. This resulted in a verdict for defendant. It was tried in Liverpool.

With your permission I will also relate a case in which I was myself threatened with an action for damages in consequence of an accident that happened to a horse in being taken home from my forge, after shoeing, by a lad in my employ. I argued the question with the owner in this way:—"That there was no direct or specific contract between us as to the shoeing of the horse; that my implied contract went no further than the doing this in a fair and judicious way; that this had really been done at my forge; and that as soon as my lad took possession of the horse at his or his servant's request, he then became his servant for the occasion; and that I was no more answerable for the safety of the horse than if he had asked the same lad to put him into a car and drive him." I suppose he was satisfied with the line of argument I adopted, for the matter dropped.

(*To be continued.*)

LANCASHIRE VETERINARY MEDICAL ASSOCIATION.

OFFICIAL REPORT.

THE members of the above Association held their second Quarterly Meeting for the year 1865, on the evening of the 7th June, for the first time, in the Lecture Room of the Royal Institution, Mosely Street, which was granted for the use of the Association by the Very Reverend Chairman, the Dean of Manchester, and the Council of the Institution.

The following gentlemen were present: The President, Mr. Peter Taylor, Manchester; the Vice-Presidents, Mr. Thomas Greaves, Manchester; Mr. John Greaves, Altrincham; and Mr. James Howell, Rochdale. Also Messrs. John Lawson, F.R.G.S., F.A.S.L.; William Haycock, Thomas Taylor, — Kirk, James Paton, R. Lucas, President of the Liverpool Association; W. A. Cartwright, Whitchurch; J. Brydon, Liverpool; W. Whittle, Worsley; G. Morgan, Liverpool, S.L.S.; G. Fleming, F.R.G.S., F.A.S.L., V.S., King's Own Hussars; — Wood, Wigan; W. Hunting, jun.; — Challinor, Pendlebury; W. A. Wilson, Liverpool, and others.

Owing to the absence of the Secretary, the minutes of the last meeting were not read.

The President commenced the business of the evening by expressing his sincere pleasure that the Society had been allowed to hold its Quarterly Meetings in the Lecture Room of the Royal Institution, and at the conclusion of his remarks proposed a vote of thanks to the President and Council of the Institution for this privilege. He then adverted to the Liverpool proposal, viz. :—That a deputation from the Lancashire, Liverpool, and Yorkshire Associations should meet together on a convenient day in Manchester, to form a resolution to the effect, that the united associations should assist its members to defend any unjust action brought against any member of these associations ; such as injuries from shoeing, unavoidable results from operations, &c., &c. It was unanimously carried, and the following gentlemen were proposed by the President, and seconded by Mr. Haycock, as a deputation, to carry out the objects of the proposal, namely, Messrs. John Lawson, Thomas Greaves, and Cuthbert Simpson.

The President announced that he had received from Mr. John Greaves, of Altrincham, the bust of the late Professor Coleman, as a present by him to the association, and moved a vote of thanks to him for the same. Carried unanimously.

Mr. Thomas Greaves then read a very able essay on the late prevailing disease, Influenza. The subject was scientifically treated, and the discussion that took place partook of the same character, blended with the results of much practical experience. At its conclusion, the President proposed a vote of thanks to the essayist for his valuable paper, which was seconded by Mr. Haycock, and unanimously accorded.

The following gentlemen took part in the discussion : Messrs. Wilson, Brydon, Lawson, Lucas, Morgan, Cartwright, Fleming, John Greaves, Haycock, and Peter Taylor.

The President announced that Mr. Cartwright would introduce an essay on Parturition at the next meeting.

W. A. TAYLOR, Jun.,
Hon. Secretary (*pro. tem.*)

Veterinary Jurisprudence.

CAMELFORD COUNTY COURT.

THURSDAY.—*Before* M. FORTESQUE, ESQ.

HORSE CASE.—WICKET *v.* WILLIAMS.

THIS was a suit to recover 9*l.* 3*s.* 1*d.* damages sustained by the sale of a horse.—The following were the facts as brought out in the evidence :—Mr. Wicket is a farmer, living at Treslea, near Camel-

ford, and on the 10th of April the defendant (Mr. Williams, of Slades) came to plaintiff's house by agreement, to see his horses. They had talked of exchanging for a mare Mr. Williams had, which he wanted to dispose of as she was heavy in foal, and he wanted a horse to go to work at once. The defendant fixed on two, either of which he thought would suit him. Plaintiff gave him his choice. Accordingly an agreement was made to meet at Camelford with the horses on a certain day. They met, and eventually made a bargain, by Mr. Wicket giving his horse and 11*s.* to boot for Mr. Williams' mare. Three witnesses were brought to prove that they heard Mr. Williams say repeatedly that his horse was quite sound and staunch. On the day the exchange was made Mr. G. Arnall, veterinary surgeon of Camelford, examined the horse, and found that the eyes were not right, but not being called in professionally, he did not make a close examination. On Mr. Wicket's returning home with the mare he thought by her actions that she must be blind or nearly so. Accordingly Mr. Arnall was called to examine her more closely, and found that the eyes were affected with what is termed periodical or constitutional ophthalmia; that the sight of one eye was entirely gone, and the other nearly so. On being cross-examined by his Honour, he stated that the disease being what is termed "periodical" and "constitutional" might pass away and return, but that it could never be cured. The eye that was blind would never recover its sight. After having the mare examined by the veterinary surgeon, and finding she was not sound, plaintiff took her to Mr. Williams, and requested to have his own horse back. This Mr. Williams would not allow. Mr. Wicket then, in the presence of a gentleman he took with him as a witness, offered 15*l.* for his own horse. Mr. Williams not agreeing to this, plaintiff told him he should sell the mare by auction, and sue him for damages. This was accordingly done on the 28th of April, in the Market, Camelford. After notice had been sent to the defendant, and after all expenses connected with the sale were paid, Mr. Wicket was 9*l.* 3*s.* 1*d.* out of pocket, according to the price—15*l.*—put on his horse. His Honour, in summing up the case, put very clearly to the jury what their duty was, and after a short consultation, they gave a verdict for the plaintiff, damages 4*l.* 10*s.* Mr. Male, of Camelford, conducted the case for the plaintiff; and Mr. Peters, of Launceston, for the defendant.

THE LAW ON HIRED HORSES.

At the Secondaries' Court, on Wednesday, before Mr. Secondary Potter and a jury, an action "Coleman *v.* Gilbey," in which damages were sought to be recovered for negligence to a hired horse, was the subject of investigation. It appeared that a carriage horse had beeu hired for the journey from Hayes to London. On the way back it fell down and hurt its knees. It was thereby injured, and had been

sold. On the part of the defendant it was alleged that proper care had not been taken of the animal, which it was said ought to have been led, not ridden home. It was denied that the friend to whom the animal was entrusted had been drinking. The learned Secondary explained the law to the jury. He said that a person who hired a horse was bound to take care of it, and to return it uninjured. If such was not the law, many persons who let horses for the "Derby Day" would be losers. It was said that the horse slipped by accident, but he left it to the jury to say whether there had been "negligence" in the case. The jury gave a verdict for the plaintiff of 50*s.*, and the Secondary gave a certificate for costs, as the parties did not reside in the same district. The costs will probably be about 20*l.*

CORNWALL LENT ASSIZES.

(*Before* Mr. Baron Channel.)

POISONOUS EFFECTS OF ARSENICAL VAPOURS ON ANIMALS.

Matthews *v.* King.

(*Concluded from* p. 346.)

Mr. Karslake then addressed the jury for the defence. He said that the plaintiff had had the advantage of representing cause and effect, and it became difficult for defendant to prove the negative and to prove that the losses complained of were not attributable to the vapours from the arsenic works. There was no pretence whatever for claiming damages for the loss of cattle. The defendant was first applied to for £27 10*s.* for the loss of a horse which cost plaintiff but £19 six years ago, and the action was defended because it was not from any fumes from defendant's chimney that the loss complained of took place. It was noticeable that the only complaint made as to the effects of vapours on the farm referred only to two fields, Longfield and Bigfield; and although it was assumed that the horse had died from arsenic from the chimney, yet it had not been proven—it could not be proven; and no evidence whatever had been given to show what the colt and heifers died of. No less than nine hundred people lived in close proximity to the mine, many drank the water that came from the roofs upon which the vapour deposited itself, and ate the vegetables in the surrounding gardens, without any ill effects being experienced. Every precaution had been taken to prevent the vapour escaping from the chimney, for the vapour deposited arsenic that was too valuable to allow of its being wasted. As to the piles of arsenic spoken of, they were on the company's premises, and were not allowed to blow about the country. The tin works had been set up for some time, and alterations were made expressly to obviate the possibility of danger, and to secure the whole product for the purpose of merchandise. Flues were constructed with zigzags to stay the arsenical dust; and the

fact was, that the mare in question was sickly, because her colt had been removed early; but there was not the smallest proof that either she or the cattle died of arsenic, nor that they exhibited any symptoms of poison. It was easy to lose young stock and attribute it to the works. The mare that died gave birth to a foal in 1862. She was an old mare. She strayed away from her field, and might have eaten some of the arsenic from the piles; but the question which they had to try was, if it was without doubt proven that the horse ate the barley in plaintiff's field that had been impregnated with arsenic from the defendant's chimney, and did it continue to do so for some days, and die in consequence?

Mr. W. Pascoe, surface agent of the Wheal Busy Mine, gave evidence that the alterations made in the flues detained the vapour, gave three times the arsenic that was previously obtained, and prevented the vapour from passing off in any considerable quantity to the fields. The neighbours who had kept stock had not complained since the alterations.

Cross-examined.—Mrs. Jeffries had a horse which it was said died from arsenic. The zigzag flues were larger flues than the old ones.

Thomas Oates, who rented the land before the plaintiff, and other witnesses, alleged that they had lost no stock.

After a long consultation the jury gave a verdict of 10*l.* for the plaintiff.

The editor of the *Western Morning News*, whence the above report is taken, in a subsequent paper says:

"Mr. T. Mitchell, surgeon, of Redruth, has addressed to us a very lengthy and elaborate argument in support of the defendant's case in the trial of Matthews *v.* King, tried on Wednesday week at the Bodmin Assizes. The defendant, it will be remembered, was cast in damages on account of the arsenical vapour from his works having caused the death by poison of cattle in two adjoining fields belonging to plaintiff. Mr. Mitchell contends that the hypothesis accepted by the jury, that the food of the cattle had been poisoned by the vapour, is improbable, and that the animals must have obtained access to arsenic lying about in heaps near the flues. The same suggestions were made by Mr. Karslake at the hearing, and although Mr. Mitchell adduces some points not then urged, and forcibly argues the question in a way which might have had more effect on the jury than the counsel's address, we cannot consent to allow the cause to be re-tried in our columns, when, even if the verdict of public opinion were for the defendant, no legal force would appertain to their decision."

[We remember being consulted, several years since, by the late Mr. Rickards, M.R.C.V.S., Penzance, respecting some horses and cattle suspected to be poisoned by the vapours given off from tin-burning houses. Arsenic was indubitably proved to be the cause of death; and we referred its presence to the state of the herbage on which the animals fed, this having deposited on it the arsenic known to be given off during the smelting of tin; for the chimneys being carried high up, the wind oftentimes conveys the vapours a long

way off, and the condition of the grass around gives proof of their destructive properties. Similar results obtain in the neighbourhood of copper-smelting works in Wales. That even the soil may become impregnated, and growing plants rendered poisonous by it, was proved by an experiment communicated to us by Professor Brande, who, having been engaged in a law-case in which a compound of lead was the poisoning agent, took home a little of the soil, and caused to grow in it some mustard seed. Analysis of the plants gave indication of the presence of the metal.—Eds.]

ARMY APPOINTMENTS.

War Office, Pall Mall; *June 20th.*

11th Hussars.—Acting Veterinary Surgeon Charles Percivall to be Veterinary Surgeon, *vice* David Paley, who resigns, June 30, 1863.

W. Edmonds to be Acting Veterinary Surgeon, *vice* C. Percivall, promoted to 11th Hussars.

War Office, Pall Mall, *June 23rd.*

Royal Artillery.—Veterinary Surgeon of the first class, James G. Phillips, from half-pay, late of a Cavalry Depôt, to be Veterinary-Surgeon, *vice* William Dorrofield, superseded for being absent without leave.

MISCELLANEA.

TRANSFER OF THE EDINBURGH NEW VETERINARY COLLEGE TO LONDON.

Another veterinary college is afloat, and not without precedent for such a step. A few years back another veterinary college was started in Edinburgh, and with so much success that this is now coming to London. The new Veterinary College of London, in so many words, is the new Veterinary College of Edinburgh. Some further weight is given to the new college by the name of Mr. R. L. Hunt, of Birmingham, "President of the Royal College of Veteri-

nary Surgeons," in which capacity Mr. Hunt would appear to have been rivalling the mole-eyed woodman, and complacently cutting off the branch upon which he was sitting. It was simply idle to say that these two schools would not be antagonistic. We might as well have two Royal Colleges of Surgeons; and for this reason, if the *Vis unita fortior* really can mean anything, we must regard the movement as a mistake.—*Mark Lane Express.*

OBITUARY.

Adam Hampson.—We deeply regret to have to record the death of Mr. Adam Hampson, of Bolton-le-Moors, surgeon, and also member of the Royal College of Veterinary Surgeons. Mr. Hampson, who had been on a visit to Paris, was travelling on his way home by the "tidal train," to which the frightful accident occurred on June 9th, near to Staplehurst, Kent, when he and nine other passengers were killed, and upwards of twenty more injured to a greater or less extent. He was greatly respected by numerous friends who have to mourn his sudden and violent death. Mr. Hampson was only 41 years of age. His diploma bears date May 23rd, 1850.

Francis Cotterell.—We have also to record the death of Mr. Francis Cotterell, M.R.C.V.S., Royal Artillery. Mr. Cotterell obtained his diploma May 14th, 1851. Also of—

William Henry Webb, of Thurlow, who died on the 31st of May. His diploma is dated June 1st, 1842.

John Hopkin, Mildenhall, Suffolk. His diploma bears date May 2nd, 1861.

George Kirkham, West Derby, Liverpool. Diploma obtained April 21st, 1841.

Mr. Gavin Clarke, Limerick. His diploma is dated August 11th, 1847.

Mr. Edward Darlington, Armagh. His diploma is dated May 19th, 1852; and

Mr. James Rogerson, Garstang. His diploma is dated January 22nd, 1827.

The grave has been said to be the end of all. It is only so as far as this life, or this world, is concerned. Doubtless in *it* "all earthly schemes, ambition's ladder, love's torch, the marriage altar, the conqueror's sword, the poet's wreath, the rich man's gold, the poor man's sorrow, woman's beauty, and manly strength, find an end."

THE

VETERINARIAN.

VOL. XXXVIII. No. 452. AUGUST, 1865. Fourth Series. No. 128.

Communications and Cases.

A FEW THOUGHTS ON INFLUENZA IN HORSES.

By Professor Varnell, Royal Veterinary College.

Contributions to veterinary literature on influenza in the horse have not been so numerous as we could have wished and expected, when we consider the importance of the disease. I think we should never hesitate to publish our views on this or any other subject, even though they may not exactly harmonise with those entertained by others, as some good is sure to be derived from freely expressing our thoughts, since one individual may throw light upon a subject which may be entirely overlooked by another.

It would be a very interesting task to compile a history of influenza, if only for the last twenty years, during which time, although the disease has been pretty much of the same type, it has nevertheless presented many phases of character, particularly as it regards its intensity and the duration of the symptoms. In some cases we observe well-marked symptoms, which, in others are scarcely to be recognised.

In the remarks I am about to make on this subject I have no intention of entering into it historically, although, as before stated, it would be interesting to do so, and it would well repay any one for his labour. I simply propose to add my quota of experience to that which has already appeared in the pages of the *Veterinarian*, and in so doing I shall only refer to the particular forms of the malady as they have

appeared to me during the last half year. The brief sketch I propose to take of this subject will be from experience gained in a comparative small area, in which, nevertheless, a great many cases have come under my observation and treatment. Should the opinions I have formed with reference to the pathology of this disease not accord with those of other practitioners, it may be partly due to the influence of local circumstances, and perhaps, also, in some instances, to our not taking the same view of the causes likely to produce it, or of its pathology, and the medical treatment and care necessary to effect a cure. Diversities of opinion on these points will always more or less exist, and can only be brought into harmony by more fully understanding the influences that locality and other circumstances must have in producing variations in the pathological results, and also the effects of such treatment as may have been resorted to.

The necessity, therefore, for practitioners in whatever district this or any other epizootic may prevail to record in some public journal the results of their experience is obvious, as it would evidently assist in forming a better estimate of its true nature, the causes which produce it, and the relative value of the different modes of treatment resorted to for its cure.

I have stated that I believe influenza has been the same, as far as its principal features are concerned, for several years, and I am also of opinion that the treatment, whenever successful, has been essentially the same; not perhaps in all the details, but in principle.

With these few prefatory remarks, I now proceed to state my own views on the causes, pathology, and results of influenza, as observed by me during the latter part of the year 1864 and the early part of 1865.

At this stage of my remarks I may as well define, at least as far as I am able, the term *Influenza*. This term is understood by me as applying to some peculiar condition of the atmosphere which has a specific influence on the health of animals, and which may assume either an enzootic, or what is more common, an epizootic form. It is characterised by febrile and catarrhal symptoms, accompanied with loss of appetite, great prostration of strength, and often complicated with disease of the liver, the lungs, the mucous membranes generally, and what, to my mind is far more important, the nervous centres generally.

As far as my observations have extended, I have witnessed this disease to exist in horses of all ages. If, however, there is one period of the animal's life when he seems to be more

predisposed to become affected by it than another, it appears to me to be between his fourth and seventh year. But situated as I am, and have been now for many years, horses younger than four years do not so often come under my notice. Country practitioners, who are, or ought to be, more familiar with the diseases of young stock, should give us the benefit of their experience here, which would be valuable in a statistical point of view.

I have observed that much pain, either resulting from operations, or from wounds accidentally produced, or from extensive blistering, also shocks to the system from concussive force, or even fright, are causes calculated, through their effects on the nervous system, to predispose the horse, during the prevalence of this disease, to become affected. Atmospherical influences tend much to the production of this malady. Cold and damp seasons are not only favorable to the development of it, but are also unfavorable to recovery. Excess of food, even though the quality thereof is good, tends likewise to the production of this disease, especially if the horse has not a proper amount of exercise given him. An insufficiency of nutritious food also produces similar results, but the process by which this is effected is different. Food of a bad quality, independent of its not containing sufficient nutriment, tends to the accumulation of effete material in the system, which becomes a powerful predisposing cause. Sudden debility, from whatever cause it may arise, has the same tendency; but, nevertheless, horses, apparently in vigorous health, are by no means exempt from contracting this malady. The results, however, in such animals are, as a rule, more favorable.

These are a few of the most prominent predisposing causes of influenza. I will now very briefly enumerate some of those that are more immediate or determining in their nature. In doing this, I may not advance opinions quite in accordance with those usually accepted, nevertheless, as I have before stated, I am expressing only my own thoughts on this subject.

I can easily conceive that a poison may be generated in the system, or that one can be taken in from without. For example, with reference to the former, in a horse that is overfed and underworked, a non-appropriated material, or a material the result of textural waste, or both conjointly, may accumulate in the tissues of the body. In this retained matter I think it possible for a poison to be generated which finds its way into the circulating stream of blood. I can also imagine that the blood itself may be loaded with effete

matter arising from defective secretion and excretion, and that in this also a poison may be formed. The chemist may not be able to demonstrate the nature of this poison, or even its existence, but the physio-pathologist recognises an influence upon the nervous system so potent in its effects that he hesitates not to attribute it to a poison, and upon which, I believe, most of the phenomena we observe in influenza depend.

Causes originating from without.—To illustrate this idea I will suppose that a horse perfectly healthy is exposed to the following conditions, the foci of which are numerous. For example, crowded and imperfectly ventilated stables, in which he would be compelled to breathe an air vitiated by the emanations from the bodies and excrements of any other animals it may contain. Fetid gases from cesspools or decomposing dung-heaps outside the stables; air contaminated by the product of decaying vegetables, wafted to the spot from sources near at hand or comparatively afar off; from the water he partakes of, which, although apparently very good, may nevertheless be impregnated with compounds inimical to the health. But what is more potent than either of these, and especially when in combination with them, is the air the animal breathes being contaminated with effluvia from others affected with this or some allied disease. From each of these causes, or all of them collectively, a material may be taken into the circulation which may of itself be sufficient to produce disease; not in every horse, perhaps, that is exposed to its influence, but to many. I am not positive, but I think that this material, when mingled with the blood, may act as a ferment, thereby very soon affecting in like manner the whole of the circulatory medium, and thus rendering it unfit to support the functions of life.

While I believe that the effluvium from the body of a horse affected with influenza, when absorbed in large quantities, is a powerful determining cause, it must nevertheless be admitted that the disease had a beginning, therefore we must look for its mode of development at the outset, independent of that arising from affected animals; and if such can take place once, no one can say but it may do so again and again, to any extent.

It will be seen, from the foregoing remarks, that I attach some importance to the inhalation of effluvia coming from the bodies of horses labouring under influenza by those not affected; nevertheless, I doubt very much whether such emanations, even if breathed in large quantities, would be capable of producing such an affection, unless other circumstances pre-

viously mentioned, were also more or less in operation. This opinion seems to be borne out by the fact that this disease often suddenly ceases at a time when many horses are labouring under the malady, and when we should think the air is highly charged with morbific matter. But it is not so. It would seem that the disease has "worn itself out." This is an expression often used when the malady is on the decline, or has disappeared. May it not be that the causes, predisposing and exciting, which especially favoured its spontaneous development, have partially or wholly disappeared?

During the period I referred to at the commencement of these remarks, when the disease has more or less prevailed, both its character and intensity have varied considerably; yet, as before stated, it has been pretty much the same as far as its chief and most important phenomena are concerned. These variations I will now endeavour to explain.

At the outbreak of this affection, in the autumn of 1864, the disease in each animal ran its course in a much shorter period of time than it has since, and it was also far less complicated. The majority of cases that came under my notice at that period, occurred in horses which, during the greater part of their time, were kept in rather confined and close stables; taking but little exercise, and, as a rule, were highly fed. Next in number to these that became affected, were horses that were moderately fed, worked hard, but kept in hot and badly ventilated stables; while among those that were kept in open boxes or yards but very few cases occurred. It is my opinion that damp, badly drained situations, exposed to northern and eastern aspects, are more favorable to the production of this disease than dry soils and southern frontages. Low and inclosed situations are, as I think we might expect, particularly favorable to diseases of this nature.

It will be observed that I have alluded to three periods, in which the features of this disease have varied considerably.

During the first, which would embrace about two months, the most prominent symptoms were diagnostic of intestinal and hepatic derangements chiefly, often followed by attacks of acute rheumatism.

In the second period, which was longer than the first, the same organs were usually involved, if not at the onset, very soon afterwards, and the respiratory mucous membrane also became implicated. At this period rheumatism only occasionally followed.

In the third period, which would extend to the month of May, the respiratory mucous track, the conjunctival mem-

branes, and the anterior part of the alimentary mucous membrane, only, would become seriously involved.

In each of these periods, altogether extending over six or seven months, although there have been, as we have stated, some considerable variations in the symptoms, nevertheless one important phenomenon has accompanied all of them under all circumstances, and which unites them all into one type—namely, the great prostration of the vital powers that has been present, even from the commencement of the attack.

Symptoms during the first period referred to.—In mild cases, for the first two or three days after the commencement of an attack, the horse is observed to be dull and dispirited, the bowels will be slightly constipated, the fæces being paler in colour than usual, and occasionally he may have been heard to cough. In some instances these symptoms will pass off without any treatment whatever being deemed actually necessary. More often, however, they are followed by others of a more urgent nature, and which suggest the necessity of medical aid. The horse now refuses his food, his coat looks unhealthy, the urine becomes scanty, the fæces pale coloured and small in quantity, and the surface of the dung pellets glazed, and perhaps even coated partially with shreds of muco-lymph; the mouth is hot and unnaturally dry, or it may be pasty, particularly on the dorsum of the tongue, and the mucous membrane altogether, particularly around the gums, is of a yellowish-red hue, as is also the conjunctival membrane of the eyelids; the pulse is quick, perhaps sixty per minute, but feeble; the horse appears to be suffering from intense headache, and if made to move he staggers in his walk. These symptoms very clearly point to the nervous centres as being functionally deranged, the brain in particular. (The symptoms I have just enumerated have suggested the term "bilious fever," for this malady. Mucous fever has also been applied to it. Neither term is to my mind appropriate; the former, however, is more so than the latter.)

These symptoms will remain pretty much the same for two or three days longer, except that the pulse may become a little quicker and more feeble. Some simple fever medicine, which will be hereafter alluded to, may be now administered; but if the horse is well nursed and attention paid to the ventilation of his stable, he will most likely recover without the aid of any medicine whatever.

Should the disease not take the favorable turn just adverted to, there is some danger of the respiratory mucous membrane becoming involved, which would be indicated by the Schneiderian membrane being heightened in colour; soreness of the

throat, with difficulty of swallowing, even his water; the breathing also becomes quickened; the animal coughs more frequently; and its character points to the mucous membrane of the bronchia being involved; and it further suggests a careful watching of the variation of the symptoms, and the actual necessity for active medical treatment.

In the second period, which occupied about three of the middle months of the winter, I met with many instances in which the symptoms were nearly identical with those in cases which occurred in the latter part of the first period already referred to. But in the majority of instances, however, they were different, both as to the way in which they exhibited themselves and also in many of the results that followed. The treatment, as will hereafter be explained, required considerable modification, to be more extended in its application, and likewise to be resorted to with greater energy. In this respect, however, great care and caution were necessary.

This stage of the disease is very often ushered in with symptoms of pulmonary complications, differing in many important respects from any witnessed in the first period of this outbreak, yet in many respects admitting of the same pathological interpretation.

A horse is found suddenly to refuse his food, is extremely dull, has a disinclination to move, and very soon is attacked with rigors, which may last ten or fifteen minutes, or even longer, or it may be for only a few minutes. During the day he may have another of these "fits of shivering," as they would be called by the grooms. The horse being now carefully examined, his breathing is found to be slightly embarassed, his pulse increased in frequency, and very small in volume, and he may have more fits of rigors, or he may not. I have known horses to have several of them during the day, but this is uncommon. Profuse perspiration in some instances has supervened upon these rigors, which has lasted some little time, and always temporarily relieved the oppressed breathing.

At this stage of an attack I have known the disease apparently cut short, as I believe by the aid of medicine; indeed, I have never known it pass off suddenly, if I may so speak, without it; although I believe it would gradually have done so through the disease having run its course. I have said, apparently, because, if my theory be correct, the poison must be wholly eliminated from the system before all danger is over; but, by the aid of medicine, such as a good diffusible stimulant, plenty of fresh cool air, and a constitution naturally good, the system may be so fortified against the effects of the

poison that the functions essential to the maintenance of life are but little interfered with, and a restoration to health quickly takes place.

But all cases do not take this favorable course. The symptoms I have enumerated may become more intense; for instance, the cough is more painful, the respiration quicker and much embarassed, the pulse, perhaps, is increased to 80 or 90 beats in the minute, and is very weak in tone, the extremities are cold, the skin looks harsh, and is dry to the feel, the urine is scanty and high coloured, the animal refuses all kind of food, he wanders unconsciously round his box, and occasionally paws with his fore feet as though in pain (these griping pains are not constant, still they are by no means uncommon in this affection); his bowels, as a rule, are inactive, dirty looking mucus flows from his nostrils, and he does not lie down. At this critical stage of the disease great care and caution are necessary successfully to manage the case. Stimulants may be employed, but all powerful sedatives and drastic purgative agents must be carefully abstained from. Even spontaneous diarrhœa at this stage of the disease is to be dreaded, but if superpurgation takes place, the result of a dose of aloes, the chances are greatly against the horse being saved. And it is the same with powerful sedatives. What, I would ask, can be expected from the administration of agents of this kind when the nerve centres are already partially paralysed through being saturated with a poison already in the system? Why should we paralyse the heart by administering digitalis under circumstances when we could rather wish its action to be more vigorous, for the purpose of sending the vitiated stream through its two entire circuits; through the smaller one for the purpose of vitalizing and purifying the blood, by bringing it in contact with the purest air we can give the horse to breathe, and when so replenished, by its being sent by the same organ, through its larger circuit to all parts of the body, there to revive depressed nervous energy, to replenish the partially worn-out tissues, and to carry to the several emunctories of the body the product of structural wear and tear? And why, I would ask, should we resort to the use of belladonna, which is calculated to paralyse muscular fibre generally, when we see the animal sinking from exhaustion, and so weak that he can scarcely walk round his box? Nature *may* restore health, perhaps, in even what appear to us to be extreme cases, if a chance be given her, but if her processes are impeded by the effects of unsuitable agents poured into the

system, or the patient made to breathe a vitiated atmosphere, then the chances of a cure are slight indeed.

Horses so affected, however, often recover when we could hardly have expected it to be possible, even though the pulse may have been upwards of 100 in the minute, and so small that it was difficult to count the number, the animal also being so weak that he staggered as he walked round his box. At this stage of the disease we must be very cautious in not extinguishing the feeble flickering light which now only exists.

But we shall most likely have results to contend with that will puzzle our ingenuity, and some that will, perhaps, defy our powers to remove, altogether. A few of these results are as follows,—chronic cough, defective respiration, rheumatism, paralysis, disease of skin, and occasional attacks of ophthalmia. These will be commented upon hereafter.

During the third period, which extended from about the middle of March to the beginning of May, but comparatively few cases came under my notice, and these did not all present the same characteristics, generally speaking, as those of the first or middle periods. The hepatic complications and the great prostration of strength were not so frequent as was invariably the case on former occasions. The disease now assumed a more sthenic character, and although it ran its course, as a rule, quicker, nevertheless it was more difficult to manage, and it certainly had a more fatal tendency. Bronchitis, and pulmonary congestion, became the most frequent phenomena we had to contend with, and which also required the greatest attention. During this period but few cases, which exhibited that mild form alluded to in the first period, presented themselves. These, as before stated, would recover without any treatment whatever, or if any were really needed, that of the simplest kind would suffice. Indeed, had the disease not been prevalent, these cases would not have been looked upon as influenza at all.

(*To be continued.*)

ENDOCARDITIS IN A COW.

By H. Lepper, M.R.C.V.S., Aylesbury.

The animal whence the diseased heart, which I have sent you, was taken, was a five-years' old, short-horned cow. She had been two years in the possession of her owner, had had three calves, and always gave more than an average quantity

of milk up to within a day or two of my seeing her, which was on the 22nd day of May last; up to which time she was thought to be a sound, healthy beast. I was informed that the fellow cow to her, that is, the one that always stood next to her, was sold from the dairy (being in calf) early in the spring of the present year, and was reported to have since died of pleuro-pneumonia.

Symptoms.—At my first visit there was an impaired appetite; diminished secretion of milk, udder looking very empty; pulse weak and frequent, about 75 in the minute; bowels regular; respirations about 30 in the minute; percussion gave a dull sound, especially so on the left side; auscultation on the right side was pretty natural, allowing for the increased breathing; on the left side, about half way down the ribs, between the back and sternum, the respiration scarcely audible; at the inferior part the air appeared to pass through the cells freely.

From these symptoms I was disposed to think it was a case of pleuro-pneumonia, and treated it accordingly, giving daily doses of Ol. Terebinthinæ and Creasote, and stimulating the sides rather severely.

On the 25th the animal appeared to be better, the appetite was improved, and she gave an increased quantity of milk, but this only for a day or two; and from that time she gradually fell off. On the 31st a considerable swelling was perceived to exist at the breast; the jugular veins appeared to be overcharged with blood, which is a pretty sure sign of dropsy of the chest or pericardium, or both, and not an unfrequent occurrence. The tumefaction gradually increased, and, on auscultating the chest on the 5th of June, from the peculiar character of the *bruit* I was satisfied that there was a considerable quantity of fluid in the pericardium. I find it somewhat difficult to describe sounds, but this resembled a slight agitation of a fluid in a bottle at each pulsation of the heart.

I now considered my patient as hopeless, but, on the 10th day, I performed paracentesis, and drew from the pericardium about two quarts of light-straw-coloured fluid. This I did, not in the least anticipating any good to result from the operation, but purely as an experiment. As no benefit was afforded by it, I directed that the animal should be destroyed, which was done on the 12th instant.

The disease appears to have been, in the first instance, endocarditis terminating in effusion; but the density of the pericardium, and the singular appearance of the exsanguineous state of so large a portion of the heart's surface, makes

it appear to me a very singular instance of disease of this vital organ. I did not open the heart sufficiently to ascertain the state of the valves, leaving them for your inspection; but, as far as I was able to judge, they were not involved in the disease.

[The morbid changes possess much to interest the pathologist. The heart was considerably increased in size, weighing, with its vessels and pericardium, 15 lbs. Organized lymph was deposited on its external surface, varying in thickness from half to three fourths of an inch. The organ was pale in colour, and rugous on its surface. Its muscular parietes were somewhat compressed. The valves, on both sides, were healthy. The walls of the pericardium were thickened from a deposition on the inner side, and its exposed surface was roughened. The apex of the heart, and the whole surface on the left side, were firmly attached to the pericardial sac.—Eds.]

CASE OF FRACTURED JAW OF A HORSE.

By W. Shirley, M.R.C.V.S., Twickenham.

Seeing a case reported in *The Times* and *Bell's Life*, by Mr. Cox, M.R.C.V.S., London, of fractured jaw, just posterior to the incisor teeth, and which was so far successful that finding it impossible to obtain the desired union of the bone, he compromised the matter by removing the fractured portion; allow me to communicate the following case, which occurred in my practice in 1858. The subject was a bay colt of General Peel's, who, at that time, bred some thoroughbred horses at Marble Hill, Twickenham. On the 16th of October I was desired, by his studgroom, to attend immediately, and I found, on examination, that my patient had fractured his lower jaw, rather obliquely across from tush to tush, and from that fracture extended another in the centre, reaching to between the two middle incisor teeth, so that if you stood facing the horse, and looked into his mouth, the fracture formed the letter T. I immediately set my forgeman and harness maker to work, and soon produced an instrument which I thought would answer the purpose, and after carefully removing every foreign agent, small spiculæ of bone, &c., I set the fracture, and had the satisfaction of watching the case to its perfect cure. General Peel was

from home at the time, and, on his return the same evening, thinking the case hopeless, he ordered the colt to be destroyed, but, yielding to my solicitations, he allowed me to have him at my home. For fourteen days the animal was allowed nothing to eat whatever, but was well supplied with various kinds of food by suction, and he was discharged on the 10th of November, the general expressing himself highly pleased at his recovery.

All the incisor teeth of that jaw fell out, and I think one tush, but the jaw being saved, and those teeth being only temporary ones, it was of no consequence, the permanent incisors coming, no doubt, in due time (in fact, I should think before their proper time), but the colt being sent, shortly after, with others to Tattersall's (where he fetched, I believe, between one and two hundred guineas), I lost sight of him. I cannot represent the instrument used, not being a good draughtsman, but send it for your inspection and to make a drawing of it if you think proper.

This case was not communicated to you before, as I had no desire to blow my own trumpet, but seeing Mr. Cox's case in the newspapers I have ventured to send it to you for publication, thinking yours the proper medium through which all interesting cases occurring in our practice should be made public.

I can send you other interesting cases which have occurred in my twenty years' practice, if you would like to have them.

[We are obliged to Mr. Shirley for his offer; and can only say, that all cases of interest to the profession will be acceptable, and find a place in our pages.—Eds.]

WHAT IS HOMŒOPATHY?

Answer given in the following Letter from First-class Veterinary Surgeon W. C. Lord, *to the Principal Army Veterinary Surgeon.*

Cavalry Depôt, Canterbury;
June 23rd, 1865.

My dear Sir,—In acknowledging the receipt of yours (21st inst.), desiring me to report upon the general effects and results of the homœopathic practice, which I have been for some time testing, and further requesting me at the end

of this, and every third month, to report progress, so that we may ascertain, "as matter of facts, what advantage that system has over what is called, in contradistinction, allopathy," I think it right I should first give you my ideas on the true meaning to be attached to the term "Homœopathy;" for if you have not studied it attentively you may fall into the popular error of looking upon it as a mere system of globules and infinitesimal doses, and should such, unfortunately, be the case, you would naturally feel you had taken on yourself a great responsibility in entrusting me with the testing of such a system on Her Majesty's horses; therefore, it is right I should inform you that homœopathy is not a question of globules or infinitesimal doses, but a term used by Hahnemann to represent the relation that should always subsist between a given disease and the medicine capable of curing it, and nothing more; as you will perceive by the derivation of the word, ὅμοιν πάθος (like affection). Hahnemann says, "To effect a mild, certain, and permanent cure, choose in every case of disease a medicine which can itself produce an affection *similar* to that sought to be cured." Now, it is evident that, acting on this principle, a much smaller dose will be necessary, *because the drug acts especially on the seat of the disease,* but it is not necessary *generally* to give drugs in dilution, trituration, globules, or any dose the strength of which the mind cannot comprehend; at the same time, we must confess there are some which must be given in trituration or they would be inert, such as gold, mercury, &c., &c. That the principle of "similia similibus curantur" has been recognised by the leading men of the orthodox school I shall now endeavour to prove. Dr. Fletcher, in his 'Elements of General Pathology,' says, "every day's experience furnishes us with examples of the truth of the homœopathic doctrine, at least in some instances, the several substances operating in producing and curing each its own class of disease." He then enumerates aloes to cure piles, although one of the most common causes of them—cantharides, balsams, and turpentine, he says, are equally efficacious in removing gleet, and catarrh of the bladder, when present, as they are, under other circumstances, in occasioning them. And again, "Among the diaphoretics, tartar emetic has, according to our own personal knowledge, excellent effects in stopping a diaphoresis." He also shows us how mercury can both cause and cure laryngitis, ptyalism, and iritis. Tartar emetic produces vomiting and purging in man, yet Dr. A. Swaine Taylor tells us, "It has been used with great effect to arrest purging in diarrhœa and cholera" ('Guy's Hospital Reports,' 3rd

Series, vol. iii, p. 381); and at p. 379 he says, "it arrests vomiting." Majendie, in a memoir entitled, 'L'influence de l'emetique sur l'homme,' says, "it acts specifically in inflaming the lungs." Yet Professor Christison, in his 'Dispensatory,' p. 149, recommends it for the cure of pneumonia. The same author gives, as the secondary effects of arsenic, "epileptic convulsions." Yet, at p. 136, he says: "It is one of the standard remedies in epilepsy." Dover's powder, the favourite agent for inducing sweating, has been found by M. Deschamps as almost universally successful in checking phthisical sweating ('British and Foreign Medico-Chirurgical Review,' 1861). With respect to opium, Bohn said he was convinced, "that nothing but opiates would act as purgatives in the colic called miserere." Arsenic poisoning is accompanied by purging, vomiting, abdominal pains, and cramps, &c.; yet it has been employed successfully in the removal of similar symptoms in cholera cases, reported by Dr. Black, in the *Lancet*, October 3rd, 1857. Ipecacuanha produces nausea and vomiting, yet Professor Simpson, of Edinburgh, used to state to his class, that he had cured a case of vomiting (which had resisted all other allopathic remedies) by small doses of this drug; and Dr. Marshall Hall, in alluding to the difficulty of breathing and feeling of suffocation sometimes produced by it, says, "Ipecacunha, which is so frequently the cause, has also been recommended for the cure of asthma." But space will not allow me to enlarge on this subject, or I could give you numberless cases from the best of our allopathic authors to prove that "like cures like;" it is, however, I believe, unnecessary, for few now deny it, but why they do not act upon it is to me a mystery; long before the time of Hahnemann it was admitted by some physicians (even by Paracelsus), but Hahnemann was the first who by a process of inductive reasoning founded on facts, and laying by all hypothesis, established a system of therapeutics strictly in accordance with nature's laws, and taking for its motto the familiar words, "similia similibus curantur;" and the rules he has laid down for our guidance in this respect are so plain and undeviating in their fundamental principle, that it seems to me most unaccountable why we should not accept such a compass, by which to steer our (therapeutic) barque from the troubled sea of hypothesis into a harbour formed by nature, called facts, where doubts and fears can no longer assail us, and where our anchorage is so clearly defined that there can be no danger of our foundering on the rock of opposition to nature's laws. In taking this homœopathic rule as a guide for the selection

of our remedies, I wish it clearly to be understood that I belong to no medical sect or party; and being unprejudiced in my opinions, will not bend facts to theories, my great ambition being to reconcile the conflicting opinions of all parties, which I think can only be done by taking a different view of disease and the action of medicinal agents from that generally held by either homœopathists or allopathists; and, in a work which I am preparing for publication, I hope to be able to show how the apparently conflicting mottoes, "Similia similibus," and "Contraria contrariis curantur," may be placed on the banner of the scientific practitioner, and under them the words, *non secundum artem, sed secundum naturam*, taking for our emblem the masonic triple tan surmounted by the words, "Tria juncta in uno." I shall furnish you at the end of this month with a statement of my practice for the last quarter, which I hope will give you a favorable opinion of the success attending the selection of remedies on the homœopathic principle.

I am, &c.

To John Wilkinson, Esq.,
Royal Horse Infirmary, Woolwich.

IS IT A FALLACY TO FEED CATTLE AND SHEEP ON MALT?

By J. Seaman, M.R.C.V.S., Saffron Walden.

"Feeding cattle on malt is a fallacy." These are Mr. Gladstone's words in his budget speech for the present year. Is it a fallacy to feed cattle on malt, may I ask? for this is a question important and interesting, not only to the scientific man and the practical grazier, but to every flesh-eating individual in the country, especially to men with large families and scanty incomes, while to the artisan and the labourer it is one of vital consequence. It is important to the scientific man, because its solution will show whether or not food that has undergone a change before being swallowed similar to that which takes place in the digestive apparatus, is more readily assimilated in the body of the beast. It is important to the practical grazier, for if semi-malted and malted grain possess the flesh and fat-forming properties which many assign to it, a great end will be obtained. In the first place, he will have at the present price of raw grain a commodity

equal in nutritive value to the best linseed cake: semi-malted, at £4 per ton, malted at from £2 to £3 per ton cheaper. At present the best linseed cake as cattle-food has no known equal, and with the scarcity of the natural cattle-food (turnips, wurtzel, grasses, and green rape) during the last three seasons and the present one, it has maintained a price higher than bread, the food of man. Let the farmer once appreciate the value of germinated grain as food for cattle and sheep as it ought to be appreciated, and he will have good grounds for saying to the linseed grower and cake crusher, unless you can supply me with the best linseed cake at £8 or £9 per ton, I can and will do without your commodity.

Malt for cattle involves the interest of every meat-eating individual, for it is not enough to give a man bread, withholding other comforts; but at the present high price of all kinds of meat, butter, and cheese, very little else than bread, beer, and water, can be obtained by thousands of our fellow-countrymen. What is the cause of the present high price of meat? is a question I frequently hear asked, and it is a question I rarely hear correctly answered. It may be remembered by some who have read my letters to *Bell's Weekly Messenger* for October and November, 1862, that I there pointed out the grazier's difficulties. There had been then, owing to two unfavorable seasons, a failure in the grass, roots, and green-cole crops, and consequently an insufficient supply of the natural food of cattle and sheep; and rather than buy artificial food, almost every grazier lessened the number of his breeding flock, and many gave up breeding altogether. Hence it will appear that the primary cause of the high price of meat has been the failure of the natural food-crops of our flocks and herds, and the enormous expense incurred by the grazier in substituting artificial food. The hay this year is next to an entire failure. From the thinness of the crop it has been found that thousands of acres are not worth the cost of mowing. In this neighbourhood turnips, and the artificial grasses that have been sown, have vegetated and been swept away by the fly; again sown, and again swept away; and the wurtzel is a very inferior plant. These are the raw materials of the rich juicy flesh which "Engineer," in a letter on "watery obesity" to the *Mark Lane Express*, January 16th of this year, and which that gentleman says "costs the farmer comparatively little." And further, he adds, that "the epicurean appetite of the public is annually becoming more squeamish about the quantity and quality of fat as compared with what it was at the commencement of the present cen-

tury." Surely "Engineer" and his epicurean friends must lately have had no other meat but fat Leicester mutton. We in the land of the Southdowns and half-breds have not had reason to make a similar complaint. But I am very forcibly reminded, that there is such a combination of circumstances as will greatly influence the production of any kind of fat as human food, and all the squeamish public will have to find fault with will be the extravagantly high price of all kinds of meat.

Saccharized grain is not superior to the raw grain from which it is produced. This is the sum and substance of the asserted result of the experiments carried on by the direction of the Board of Trade, and mainly conducted by Mr. Laws, which have produced so mischievous an impression upon the minds of many agriculturists and the general public, and have been peculiarly favorable to the cause of those who oppose the repeal of the duty on malt, experiments which have given a semblance of truth to Mr. Gladstone's declaration, that "Feeding cattle on malt is a fallacy," and afforded some sort of justification to the determined opposition of Mr. Thompson and others to Sir Fitzroy Kelly's motion. It is a new thing to feed cattle and sheep upon grain at any stage of saccharization, and at what period has anything new been introduced without meeting with opposition from the great majority of persons? Stevenson's assertion that carriages could be drawn along roads at the rate of forty miles an hour was received with contemptuous incredulity by some of the leading minds of the present century. Sending messages along copper wire with the velocity of lightning, lighting towns with gas, and many other great improvements in our social system, at first were thought fallacious, as also the application of four cwt. of guano upon land producing an increase in weight of turnips of from fifteen to twenty tons per acre. When tea was first introduced, some one boiled the leaves, ate them, and threw away the decoction; another ate the leaves dry; a third after boiling ate the mixture of leaves and water with a spoon! I scarcely need remind the reader of the now estimated value of this plant. When first introduced into Britain, potatoes as food for man was thought a fallacy. The tubers were cut young, cooked, and served at table like asparagus; the berries were next eaten, and after a variety of ways of cooking were declared "nasty things, and only fit for pigs." As with the tea, so with the use of saccharized grain. The fault has been in the cooking. The material in the form of brewer's malt (and this I have stated in former letters) is overdone, and therefore partially unfitted for use as a cattle food; but, as

I shall presently show, properly prepared saccharized grain is one of the most nutritious foods at the command of the stockmaster, and of the highest value to him in his present exigency. Those who regard Mr. Gladstone as a prophet; those who think the malt feed experiments of the Board of Trade conclusive on the question; those who complacently submit to losses amongst their flocks and herds, using artificial feeding stuffs often containing 70 per cent. of impurities, and *rejecting* the more *nutritious, wholesome,* and cheaper wheat and barley; and those who are content to pay elevenpence per pound for common joints of meat, and fifteenpence per pound for chops and steaks, may pooh, pooh, and cry out humbug! at what an humble individual like myself has to say upon the dietary and general management of live stock; but the exigencies of the present season have compelled not a few to listen more seriously to the dictates of reason and common sense, and thousands of sheep and lambs, and hundreds of horses, have been fed in this neighbourhood during the past winter upon semi-malted wheat and barley. On one farm alone 100 quarters of saccharized barley have been used as food for sheep, and at the present time seven sacks of germinated wheat and barley are being consumed on another farm as food for old toothless crones and their lambs, and both are fatting fast. To test the comparative value of the two kinds of grain, one flock is having wheat and the other barley; and to further test the harmlessness of germinated wheat one shearling ram is eating a half peck per day, the produce of five pints of the grain in a raw state, and is fatting as fast as a pig when fed upon barley-meal, milk, and potatoes. This sheep is in a closed shed, and during the last month has had nothing to eat but semi-malted wheat.

Professor Voelcker, in a report to the Anti-Malt-Tax Association on the composition of five samples of malt, says, "Too large an amount of sugar in food, it appears to me, may probably have the effect of nauseating;" but if a shearling ram can eat a half peck of saccharized wheat every day, for thirty days in succession, remain in health and fatten, there do not appear any probabilities in the case. Neither are there any grounds for apprehending that "Malt can never be used except as a condiment, or in small quantities." But what grazier ever thinks of using any other single kind of food to fatten an animal upon? I am inclined to the same opinion so far as the burned porter malt is concerned; but my experiments have taught me to believe, that grain in the various forms of saccharization is the only article of diet, with the exception of rich grass, that horses, oxen, and sheep, can be

fatted upon without the aid of any other food; and I will accept a challenge for any sum not exceeding £500, to fatten six oxen or fifty sheep with saccharized wheat against any other single food, time against time, profit against profit. White, in a book called 'The Malster,' page 115, says, "To feed cattle on malt is one of the popular delusions of the day, and states that 32 stones weight of barley contain 50 pounds of nutritive or flesh-forming compounds; 22½ pounds of sugar, and 269 pounds of gum and starch; 25½ stones of malt, the produce of 32 stones of barley, contain only 30 pounds of flesh-forming matter, 53 pounds of sugar, and 175 pounds of starch. There is therefore a loss in the malting process of 20 pounds of flesh-forming compounds, and 64 pounds of good solid fatting materials." Mr. White also goes on to say that, "The loss of weight in barley during the process of malting is occasioned by the rootlets of the grain feeding upon the starch when it is germinating on the floor during the sugar-forming process." And what do such gentlemen as Mr. White think becomes of these rootlets? Do they not know that they are extensively used as food for young colts, cattle, and sheep? This closet philosophy bears a striking contrast to true experimental philosophy and to facts well known to the lowest menial on a farm. If the quality of a feeding stuff is to be measured by the weight of its different constituents in a raw state, then wheat would be placed highest in the scale; but so far from this being the case, wheat in a raw state stands lowest, whilst in a saccharized state it stands highest in the scale of animal dietetics. I repeat here what I have said in former letters, that to fairly estimate the value of a feeding stuff, it is not sufficient that it contains a large quantity of the fat- and flesh-forming constituents, but that these constituents be in a form to be acted upon within the digestive organs without deranging the functions of digestion; and he who appraises a cattle food regardless of a knowledge of physiology, chemistry, the mechanism of digestion, and practical grazing, is about as capable of the business, as the navigator who attempts to steer a ship at sea without a knowledge of the compass.

If Mr. White, Professor Thompson, Mr. Graham, and Dr. Lyon Playfair,* backed by the whole Board of Trade, nay even by the Chancellor of the Exchequer himself, were to tell the

* In 1845, Professors Thompson, Graham, and Dr. Lyon Playfair, being consulted as to the nutritive value of malt, said, "Barley, in the act of germination, loses a certain amount both of the constituents which form flesh and those which form the fat of the animal." A statement which, if literally correct, was in the aspect of the question under their consideration

stockmaster to use raw wheat and barley for feeding sheep, because they contain in this condition, as Mr. White has told us, the largest quantity of nutritive matter, I apprehend they would be answered in something like the following language: Sirs, our labourers are almost poisoned by drinking bad beer, and do you want us to poison our horses, our sheep, and our oxen, by giving them raw wheat and barley? Again, to show the inconsistency of taking the weight of the different nutritive constituents of raw grain as the standard of its food value, witness the feeding of two horses, one eating a peck of raw barley, the other the same quantity in a saccharized state. The former will be poisoned and die in a few days, whilst the latter may continue to eat the same quantity daily, week after week, and have no other food, yet remain in perfect health and get fat.

Surrounded by numerous and extensive graziers, and having been called upon to investigate diseases which have so frequently prevailed amongst the flocks and herds of this district, I feel that I can speak with some little authority upon the subject now under discussion, and that it is my duty to make known the results of my experiments for the benefit of every British stockmaster at this his most difficult period. Brought up on a grazing farm, I have from a boy had great delight in all that concerns the management of domesticated animals, but it was not until the year 1852 that I began seriously to study the diseases and general management of cattle and sheep. In the two succeeding years, 1854 and 1855, I had awarded to me the Royal Agricultural Society's first prizes for two essays on the 'Diseases of Sheep.' To find a suitable food for a flock debilitated by disease, has always been with me a serious difficulty; and during the last three years and the present one, with a failure of the root and artificial grass crops, this difficulty has greatly increased. Knowing that saccharized wheat and barley was the appropriate food for horses of delicate constitutions, or which were desired to be made fat for sale, in 1855 I conceived the idea of giving germinated grain to sheep, but it was not until the year 1860 that I could induce a single grazier to listen to my suggestion. In that year a noble lord in this neighbourhood, who being always anxious to further the plans and purposes of art and science, was the first to

not only one-sided and incomplete but unscientific, it being based upon no sufficient data. By accurate experiments, only, can such a question be determined.

The weight of their great names, however, was sufficient to deprive the malt repealers of 1845 of one of their best arguments, and the same tactics are resorted to in 1865.

honour me with having my suggestions carried into practice, by feeding an ewe flock upon saccharized wheat. The shepherd, a fair sample of the shepherd class, was decidedly opposed to the experiment; but the steward, fortunately a man of intelligence, and showing less prejudice against new systems than most flockmasters, willingly consented to have the grain prepared and the flock fed as directed by me. The experiment was a success, and a great success too, for "my shepherd" condescended to confess that "sprouted wheat was capital stuff for sheep, and hoped master would let him have more of it." This year, his lordship's turnip crop being a failure, semi-malted wheat and barley have again been used. The ewes ate it before lambing, during and after lambing, the lambs ate it *ad libitum*, and the fact of fat lambs being sold from this flock from ten to thirteen weeks old at from 40*s*. to 44*s*., carries in itself sufficient evidence that the saccharized grain system of sheep-feeding is not altogether to be pooh, poohed! Advising sprouted grain to a neighbouring flockmaster, I was told, as Mr. White in the 'Malster' has told us, that "grain in malting loses a large amount of nutritive matter." Cotton cake, costing £6 per ton, containing 60 per cent. of impurities, was given instead of barley, which at that time was worth only £6 5*s*. per ton, and when germinated, contained no impurities. The green crops were deficient and bad in quality, and the results were pitiable. The ewes lost condition, the after-birth came away dark coloured and in pieces, and from many in a state of decomposition, showing a want of nutrition in the body of the ewe, and the lambs died by dozens, while the surviving ones remain a most pitiable lot, worth only from 7*s*. to 12*s*. each. Only compare these with the lambs of the nobleman sold, ten to twelve weeks old, at from 40*s*. to 44*s*. each. Another breeder had been feeding an extensive breeding flock upon germinated barley. They ate it before lambing, and until the lambing season was over, and not more than one per cent. of loss of ewes and four of lambs has been sustained, and up to April 17th, they were as healthy, as beautiful, and as valuable a lot of lambs as could be produced. The shepherd admitted, the steward admitted, and the owner admitted, that they had never had less trouble with the lambs, and never a finer lot. On the above date, the shepherd prevailed upon his master to use beans, and beans were used instead of barley, and the results were so fearful, that I feel at a loss for words to give a true picture of the case. However, in one month the flock had been reduced £300 in value. When consulted, deaths of lambs were taking place at the rate of ten daily; and although

the ravages of disease were put a stop to by medicines and suitable diet, yet the surviving lambs were reduced to the lowest possible condition.

Another flockmaster had expressed his opinion that barley during malting lost much of its goodness, and used raw barley for feeding a lot of shearling wethers, and the loss by death of between twenty and thirty of the number was the cost of the experiment. The sheep first appeared dull, walked stiffly, the body was much swollen, they staggered in walking, and in twenty-four hours were paralysed. Many were slaughtered immediately when noticed to be ill, yet so rapid had been the progress of disease, that the fourth stomach had become dark in colour, and so much softened, that the finger could be easily forced through its walls, and in some cases had burst; the bowels were similarly affected, and, to use the butcher's own words, were "rotten as a pear." In these cases, neither the chemical, nor the mechanical laws of digestion had been fulfilled. The raw grain had found its way into the fourth, a delicate stomach, without first being ground by the teeth, and acted upon within the paunch or first stomach; there it underwent the putrefactive fermentation, evolving large quantities of poisonous gases, and the sheep died, as remarked in my last letter, poisoned by the elements of their own food.

Should any of the opponents to the use of saccharized grain feel any doubt of the accuracy of my facts, or should there be any gentleman who may be desirous of pursuing the subject for the sake of elucidating and establishing the truth upon the question, I should be most happy to introduce them to those flockmasters in this neighbourhood who are carrying out practically the principles I have advocated.

In conclusion, I would remark, that the repeal of the malt duty is as much a question for the meat as the beer consumer, for until the restrictions in the use of saccharized grain, consequent upon that obnoxious tax, are removed, the product of flesh-food in this country can never be developed in proportion to the wants of the population.

ACTION OF PODOPHYLLUM ON THE HORSE, COW, AND DOG.

By D. B. Howell, M.R.C.V.S., Reading.

Hearing of the advantages possessed by the *Podophyllum* induced me to try its effects on our patients, and I furnish you with the results, which, if you deem them worthy of insertion in the *Veterinarian*, I shall consider myself amply repaid.

Podophyllum is a plant almost universally found in both the Northern and Southern States of America, growing in shady places on marshy ground, and spreading rapidly by reason of its creeping rootstock, and known by the common names of wild lemon, May apple, or American mandrake.

The fruit is sub-acid, agreeable in flavour, and eaten with impunity.

The medicinal properties reside in the rhizome and rootlets. In spite of its common names it has no affinity with the apple, lemon, or mandrake. It is generally classed with plants of the natural order, Ranunculaceæ; but Decandolle makes it into a separate order, Podophyllaceæ, and Mr. Darby places it with the Berberideæ.

Its generic characters are,—sepals 3, caducous; petals obovate 6-9; stamens 16-18; anthers linear; stigma large, sessile; capsule indehiscent, fleshy; seeds numerous on a lateral placenta.

Podophyllum peltatum (Linn.) rhizome horizontal, creeping, some feet in length; perennial; stem simple, 12-15 inches high, terminating in 2 leaves and 1 flower; leaves pellate, 5-7, parted; lobes toothed or cleft at the apex; flowers arising singly between the leaves, large nodding white; fruit about the size of an egg, oval, crowned by the persistent stigma. When ripe it is yellow, one-celled with twelve seeds, and a sweetish acid pulp.

Its root, as imported, is in variable lengths, from 1-6 inches; about the size of a common goose-quill, wrinkled and marked with knots from which the stems arise, in colour externally reddish-brown, internally white and breaking with a short fracture. Pale brown, slender rootlets, are given off at intervals, or mixed with the thicker rhizome. The powder is yellowish in colour, with a peculiar (sweetish) odour, and a bitterish, sub-acrid, nauseous taste.

Chem. Char.—Podophyllum contains a bitter crystalline principle, two amorphous resinous ones, with gum, starch,

albumen, lignin, gallic acid, and some fixed and volatile oil. The bitter principle was obtained by Mr. Hodgson, of Philadelphia, by boiling the root with quicklime and water, precipitating the strained decoction with sulphate of zinc, dissolving the residue in alcohol, and again in boiling water, from which last it precipitates on cooling. It does not possess any purgative property. This resides in the resins, which are insoluble in pure water, but soluble in an alkaline solution. One, which is in greater quantity, is soluble in rectified spirit and in ether, the other soluble in the former but insoluble in the latter. The first is considered to possess the greater if not the whole of the purgative properties.

An infusion of Podophyllum has a slight acid reaction, causes white precipitates with solutions of lead, baryta, tartar emetic, and gelatine; blackens solutions of persalts of iron (gallic acid), and strikes a deep violet with iodine (starch). No change is produced by acids in the simple infusions, but from an alkaline one they precipitate the resins.

The most convenient preparation is *Podophylli Resina* B. Resin of Podophyllum—Podophylline. This is made by precipitating with acidulated water a tincture of the root made with rectified spirit. Water alone would cause this precipitation, but the acid separates it more completely, as also Berberin contained in American Podophyllin.

Prep. B. P. Exhaust Podophyllum in coarse powder, lb. j, with rectified spirit, Oiij, or q. s. by percolation; place the tincture in a still, and draw off the spirit.

Acidulate distilled water q. s., with one twenty-fourth of its bulk of hydrochloric acid, and slowly pour the liquid which remains after the distillation of the tincture into three times its volume of the acidulated water, constantly stirring. Allow the mixture to stand twenty-four hours to deposit the resin, which wash on a filter with distilled water and dry it in a stove. An impure resin or mixture of resins is obtained in this way, in the proportion of 3 or 4 per cent. of the root, as a pale-greenish brown powder. According to Dr. Manlius Smith the resin, when pure, is white.

Action—Uses.—An active and certain cathartic, producing copious liquid discharges without much griping or unpleasant effect. It has been found so useful in hepatic complaints that in America it has earned the title of vegetable calomel. As an ordinary purgative it may be given alone, or combined with other medicines, as cream of tartar, &c.

In the human subject the dose would be from gr. ss to gr. ij, or more.

Thus far I have used the last edition (1865) of Royle's 'Materia Medica' as a text book.

I first tried the agent on myself, taking a medium dose, and can corroborate its properties as described under "action and uses." I then gave a horse ʒj of the drug, combined with Zingib. Rad. ʒij in the form of ball, the animal having been kept without water from the previous evening until mid-day, when the medicine was given, and as much *cold water* allowed him as he chose to drink. Six hours after, a relaxed state of the fæces was produced, which continued until the following morning, but none of the evacuations were liquid. No mashes were given in this case; the horse being fed on hay.

A second animal was prepared by mashes, and to him was given Podophylline ʒiss, Hyoscyamus ʒj, Zingib. Rad. ʒij, in ball. The mashes were continued and cold water allowed. Purgation commenced in five and a half hours, and the evacuations were copious and liquid.

To the dog I gave grs. ij, in a pill, and it took four hours to operate.

The above horses and dog that I experimented upon were my own.

Through the kindness of a gentleman who takes a great interest in the progress of veterinary science, I was enabled to try its effect on the bovine tribe.

To a cow I gave Podophylline ʒj; Aloes Sol. fʒj; Liq. Ammon. Fort. ʒss, in warm water, Ojss. Action took place in nine hours, and was all that could be desired. In another case the aloes was omitted, and the drug increased one fourth; purging came on in eight and a quarter hours, and was very copious. Cold water was allowed in each case *ad libitum*.

During the past week I have given it in a case in which the liver was affected, and with decided success.

The advantages possessed by this drug are in my opinion very great in hepatic complaints, especially as our only remedy is calomel; and while this is certainly a most useful agent when trusty persons have the charge of our patients, yet when they are, as frequently is the case, otherwise, and it is left with careless attendants, our remedy becomes a dangerous one. What, for instance, would be the effect of a pailful of cold pump water given after a strong dose of calomel? Besides, salivation and several evils follow the use of colomel in continued doses, which is not met with after the exhibition of Podophylline, so that this agent possesses all the advantages of calomel without its disadvantages.

As proved in each of my experiments, cold water can be

given with impunity, and purgation produced either with or without any preparation. No griping follows, nor any unpleasant effect. After a full dose there is a depression of the animal spirits, which, however, passes away almost or quite as soon as the purgation ceases.

From the foregoing we may conclude that the dose of Podophylline for the horse and cow would be from ʒj to ʒjss; to the dog it may be given in doses of from gr. ij to grs. v, either alone or combined.

I hope my humble endeavours will induce others to employ Podophylline, and the results be communicated through the pages of the *Veterinarian*.

DISEASED LIVER IN A COW.

By A. E. Banister, M.R.C.V.S., Bridport.

The subject from which the liver sent was taken was a cross-bred cow belonging to Mr. Richard Tucker, of Chidcock.

On the 5th of May he sent to me for two drenches for a cow, only saying she was fat and would not eat. I ascertained from the messenger she was feeding upon ground corn and pulped roots. I therefore sent two doses of a saline purgative, stating that if the cow was no better in twenty-four hours the owner had better kill her, she being quite fat.

The next day I was requested to see the animal. When I arrived I found her looking very dull, the coat staring, the pulse about 80 in the minute, the mucous membranes injected, the breath fœtid, and the bowels still torpid.

I at once suggested the propriety of killing the animal, as I did not like her general appearance. But the owner said she did not look worth so much by £2 as she did two days before, and was of opinion she would be all right in a day or two, and requested me to treat the case. Consequently I forwarded more saline medicine, combining some sulphur, giving, however, instructions not to administer it if the bowels responded before they received it.

The next day the owner called, and said the cow was better, and that he had not given the last medicine sent. I, therefore, did not again see the animal, but I was informed that on the 13th she suddenly became worse, and was killed. The liver was forwarded to me for examination. The butcher

had opened the gall-bladder, which was enormously distended.

I also learned that the cow had gained flesh unusually fast up to the time when she was taken ill, and, on opening her, a large quantity of fat was found within the carcase.

The tumours I consider to be what are termed encephaloidal.

The weight of the liver, after the gall-bladder was opened, was thirty-two and three-quarter pounds, in all nearly thirty-five pounds.

[The liver was considerably enlarged, and gave evidence of its having been long diseased. Its structure throughout was studded with greyish deposits, each about the size of a hazel nut. A microscopical examination showed these to be scrofulous in their nature.—Eds.]

FUNCTIONAL DISEASE OF THE BRAIN OF A COW, ARISING FROM SOME DELETERIOUS MATTER IN THE RUMEN, LEADING TO THE ENTRANCE OF THE INGESTA INTO THE WINDPIPE.

By B. Phillips, Veterinary Student, Spilsby.

The portion of lung sent was taken from a cow that died in this neighbourhood recently, and as I think it to be an unusual case, will you kindly give me your opinion on it? and if you think it worth insertion in the *Veterinarian* I shall be glad if you will do so.

On Monday, 15th, my attention was called to an Alderney cow, the property of the Rev. Mr. Morley, of Raithby, near Spilsby. She had given her usual milk in the morning, but in the afternoon was observed to stagger and fall. After some trouble she managed to get up again and walk to a shed close by, when it was found that the secretion of milk had ceased. After being in the shed a short time she became paralysed. The symptoms otherwise were coma, constipation of the bowels, coldness of the extremities, pulse about 66, dry muzzle, cold tongue.

Purgatives were at once administered and enemas thrown up, the female catheter was passed, diffusible stimulants were also given with aromatic tonics, but without any beneficial result.

On visiting the cow again at 5 p.m. she had become more restless, the conjunctiva had become more sensitive to the touch of the finger, and the head was thrown back as far as possible; the respiration was considerably increased and much more difficult; so much so, that it could be heard several yards off before entering the shed. But the most remarkable fact in this case was frequent vomiting through the nostrils only, of a great portion of the contents of the stomach, amounting at least from four to six gallons in the space of an hour. The ejected matter was very offensive, and it struck me that a large quantity of the gastric juice was mixed with it. The remedies resorted to appeared to have no effect, except the enemas, which brought away a fair quantity of alvine matter with them.

I gave my opinion to the owner that the cow would die from suffocation, in consequence of the frequent vomiting, for, from the nearly unconscious state of the animal, I conjectured that a large portion of the ejected matter must pass down the trachea, and thereby produce death. She died an hour after my leaving her.

The next day, at 6 a.m., I made a *post-mortem* examination, when I had no difficulty in discovering the immediate cause of death, as you will see by the portion of lung I send you, the air-tubes being filled with ingesta. All the stomachs were healthy with the exception of the omasum, which was very full, and its contents hard and dry. All the other organs were in a healthy state.

What puzzles me most, and why I ask you for an opinion on this case is, that I am unable to form a satisfactory opinion as to the cause of vomiting. The cow had a calf about three months ago, and had been a remarkably healthy animal previous to this attack. I have also ascertained from the owner that for some few days previous to the animal's illness she ate some grass, cut from a lawn, that contained a large quantity of dirt, which may account for the state in which the contents of the third stomach were found.

[The pathology of this disease was sufficiently well marked, but the cause is not very apparent. The early implication of the brain and nervous system led to such a loss of sensation as to allow of the ingesta finding its way into the trachea without causing any irritation to the larynx. A circumstance often occurring in the disease known as parturient apoplexy.—Eds.]

Facts and Observations.

HYDROPHOBIA.—Since our last, several deaths from this fearful disease have been reported in the daily press, occurring principally among children. It is to be regretted that so many dogs are allowed to run about the streets unmuzzled and unowned.

In Leeds they appear to be acting very determinedly, as nearly fifty dogs have been "taken into custody" by the police, and destroyed by prussic acid. Lynch law!

THE AMNION AND THE ALLANTOIS.—The amnion has been considered a sac filled with a fluid which envelopes and shelters the embryo during its slow assumption of the condition in which it is competent to breathe and receive food from without. The allantois is developed much later than the amnion, neither from the serous, nor from the mucous (or epidermic and epithelial) layers of the germs; but from that intermediate stratum whence the bones, muscles, and vessels are evolved. It arises, as a solid mass, from the under part of the body of the embryo, behind the primitive intestinal cavity; and, enlarging, becomes a vesicle, which rapidly increases in size, envelopes the whole embryo, and being abundantly supplied with arterial vessels from the aorta, serves as the great instrument of respiration during fœtal life. In the bird, the porosity of the egg-shell allows the allantoic blood to exchange its excess of carbonic acid for oxygen by osmosis.

STRUCTURE OF THE SARCOLEMMA.—Dr. Beale has been studying the structure of the sarcolemma and its relations to muscular fibre on the one hand, and to the nerve-fibre and trachea on the other. This investment, as is known, is not universally found upon human striped muscle, and while the general opinion of continental anatomists is that the nerve-fibres actually perforate the sarcolemma, and come in contact with the contractile tissue, Dr. Beale believes this is an error arising from the misinterpretation of the appearances observed. With regard to insects, the sarcolemma is seen delicately striated, arising not from the muscular striæ, but produced by the ramifications of fine branches of the trachea, which with nerves may be followed in considerable number to the sarcolemma. Under favorable circumstances, however, the highly elaborate arrangement of the nerve-fibres

and tracheæ of the muscle may be observed. The fine trunk of the nerve, one of the several terminating ones, is compound, and consists of a number of exceedingly delicate nerve-fibres, each of these being composed of still finer fibres, which subdivide very freely, forming an elaborate network, which may be traced over every part of the sarcolemma. The arrangement of the tracheæ is equally elaborate, forming a network of extremely minute tubes, also over every part of the sarcolemma. They frequently anastomose, and the finest branches are not to be seen by the aid of a magnifying power of 200 or 300 diameters; thus they have never been seen before. The result of Dr. Beale's observations is, that the membranous sarcolemma of insect muscle is composed of very fine air-tubes and nerve-fibres imbedded in a transparent material, so incorporated with it as to form a part of the substance. This elaborate sarcolemma is developed with wonderful rapidity, the entire muscle being in some cases doubled in size in the course of two or three days.—*Quarterly Journal of Science.*

The Function of Leaves.—M. Boussingault says that —1. Leaves exposed to the sun in *pure* carbonic acid gas do not decompose it, or if they do, it is with excessive slowness. 2. Leaves in a mixture of this gas and atmospheric air rapidly decompose the first named, and oxygen does not seem to interfere in the phenomenon. 3. Carbonic acid is also rapidly decomposed by leaves when it is mixed with either hydrogen or nitrogen. Similar results he found to obtain in the combustion of phosphorus.

Smut in Wheat.—Mr. M. C. Cooke, in his work on 'Microscopic Fungi,' states, "One of the fungal diseases of corn, long and widely known, has obtained among agriculturists different appellations, such as smut, dust-brand, buntear, black-ball, and chimney-sweeper, all referring, more or less, to the blackish, soot-like dust with which the infected and abortive ears are covered. Wheat, barley, oats, rye, and many grasses are subject to its attacks. No one passing through a field of standing corn, after its greenness has passed away, but before it is fully ripe, can have failed to notice, here and there, a spare, lean-looking ear, completely blackened with a coating of minute dust, which comes off easily when touched. Every granule of this minute powder constitutes a spore capable of generation. One square inch of surface contains about 8,000,000 of these spores. The plant which yields this minute germ is the *Ustilago segetum*, or smut of the standing corn.

New Application of Gaseous Ammonia.—At the sitting of the French Academy, on the 9th of January, M. Charles Tellier proposed the use of gaseous ammonia as a source of motive power—not when steam is applicable, but as a substitute for steam in omnibuses on common roads, for example, and locomotives in tunnels. He founds this use of ammonia on its great solubility in water, its easy liquefaction, its capability, at ordinary temperatures, of affording utilisable pressure, and of having its vapours super-heated without necessitating recourse to high temperatures, and, finally, the facility of recovering from the utilised vapours the latent heat they contain, and transmitting it to those which are about to be evolved—effects produced simultaneously by the mere solution of the gas in water. He affirms, that if a certain quantity of liquefied ammonia is stored up in a close vessel, and there is placed in its vicinity about three times as large a bulk of water, the liquid ammonia may be vaporised, and a motive force—which may be looked upon as constant—of from eight to ten atmospheres obtained, the latent caloric of gasefication being continually supplied by the caloric disengaged during the solution of the gas in water. He calculates that ten kilogrammes (about 22 lbs.) of the liquefied gas would furnish one horse-power for an hour: twenty kilogrammes (44 lbs.) of the gas, or a two horse-power for an hour, and sixty kilogrammes (132 lbs.) of water, being sufficient to enable an omnibus to traverse Paris.

Practical Application of the Spectrum, by Professor Roscoe.—In a lecture delivered at the Royal Institution a short time since, Professor Roscoe stated that he had lately applied spectrum analysis to the manufacture of steel by the Bessemer process. One of the great drawbacks to the successful practical working of Mr. Bessemer's beautiful process for converting cast-iron directly into steel, has been the difficulty of determining the exact point at which the blast of air passing through the molten metal is to be stopped. The conversion of five tons of cast-iron into cast-steel usually occupies from fifteen to twenty minutes, according to the varying conditions of weather, quality of the iron, strength of the blast, &c. If the blast be continued for ten seconds after the proper point has been attained, or if it be discontinued ten seconds before that point is reached, the charge becomes either so viscid that it cannot be poured from the converting vessel into the moulds, or it contains so much carbon as to crumble under the hammer. Up to the present

time, the manufacturer has judged of the condition of the metal by the general appearance of the flame which issues from the mouth of the converting vessel. Long experience enables the workman thus to detect, with more or less exactitude, the point at which the blast must be cut off. It appeared to the speaker that an examination of the spectrum of this flame might render it possible to determine this point with scientific accuracy, and that thus an insight might be gained into the somewhat complicated chemical changes which occur in this conversion of cast-iron into steel. At the request of Messrs. John Brown and Co., of the Atlas Works, Sheffield, Mr. Roscoe, investigated the subject, and succeeded in obtaining very satisfactory and interesting results. The instrument employed was an ordinary Steinheil's spectroscope, furnished with photographic scale and lamp, and provided with a convenient arrangement for directing the tube carrying the slit towards any wished-for part of the flame, and for clamping the whole instrument in the required position. By help of such an arrangement the spectrum of the flame can be most readily observed, and the changes which periodically occur can be most accurately noted.

The light which is given off by the flame in this process is most intense—indeed, a more magnificent example of combustion in oxygen cannot be imagined; and a cursory examination of the flame-spectrum in its various phases reveals complicated masses of dark absorption bands and bright lines, showing that a variety of substances are present in the flame in the state of incandescent gas. By a simultaneous comparison of these lines in the flame-spectrum with the well-known spectra of certain elementary bodies, the speaker has succeeded in detecting the presence of the following substances in the Bessemer flame:—Sodium, potassium, lithium, iron, carbon, phosphorus, hydrogen, and nitrogen.

A further investigation, with an instrument of higher dispersive and magnifying powers than that employed, will doubtless add to the above list; and an accurate and prolonged study of this spectrum will probably yield very important information respecting the nature of the reactions occurring within the vessel. Already the investigation is so far advanced that the point in the condition of the metal at which it has been found necessary to stop the blast can be ascertained with precision; and thus, by the application of the principles of Spectrum Analysis, that which previously depended on the quickness of vision of a skilled eye has become a matter of exact scientific observation.

THE VETERINARIAN, AUGUST 1, 1865.

Ne quid falsi dicere audeat, ne quid veri non audeat.—Cicero.

THE FORMATION OF AN ASSOCIATION FOR THE WESTERN COUNTIES OF ENGLAND AND SOUTH WALES.

We are much gratified at being able in the present number of our Journal to record another proof of our onward progress—the formation of a Veterinary Medical Association for the Western Counties of England, held at Plymouth, on the 20th ult., the inauguratory address having been given by Mr. Warne Raddall, M.R.C.V.S.

Having been warm advocates for the formation of these associations ever since the time they were first proposed by Mr. Warne Raddall, arising from a conviction that in them the elements of union and progress existed, we may be permitted to express our gratification at the advancement which is being made by them. Doubtless they will prove the means of adding to the harmony and concord which ought at all times to obtain amongst us; they will also prove incentives to that freeness of communication so much to be desired, and by which the profession cannot fail to be benefited, while in the end they will leave little to be hoped for, since there will be a gradual disappearance of that spirit of jealousy arising from a fear of others knowing as much as ourselves and thus supplanting us; a far nobler feeling taking possession of the mind, from each being better acquainted with the principles by which the other is actuated, and thus a brotherly sentiment will pervade the body and extend itself to every section of the profession, the interests of one and of all being identical.

But may we venture to ask, What are our metropolitan brethren about? If we dared to be so bold, we would censure them for their supineness; but we would rather counsel them, being our friends, and say to them, the members of the profession in the provinces have naturally looked to them to be up and doing ere this. Still, it is not even now too late

for them to unite and establish a society for the metropolis, which, from the opportunities it would possess, and the talent called by it into requisition, would soon take a high standing among those already formed, and be accepted as the Central Veterinary Medical Association of England. We are indebted for this idea to one who is very earnest in the advancement of the profession, and has contributed much thereto. He has further suggested, that to the Metropolitan Society yearly should be sent a deputation from all the other societies, so as to form a Veterinary Congress, at which questions should be deliberately considered affecting the body corporate, and the result of their experience during the year given; more especially should any peculiarities in ordinary diseases have shown themselves, or epizootics have broken out in their several localities, with the modes of treatment adopted, whether successful or otherwise, be noticed. Thus would a large amount of useful information be obtained, the diffusion of which, by means thought the most desirable, could not fail both to interest and benefit the profession. We need hardly add, that our hearty concurrence was at once most cordially given to the suggestion, and we hope we shall see it adopted ere long.

In our last we adverted, in terms of commendation, to the proposed conference for forming a *Mutual Protection Society*, which we doubt not will prove one of the most important benefits yet obtained from these associations. It is with great satisfaction we append the following letter:

KNOTT MILL, MANCHESTER;
July 19*th*, 1865.

GENTLEMEN,—We feel greatly obliged to you for your very kind and encouraging remarks, in your leader of this month (July), upon the subject of "Mutual Protection Societies." I have also very great pleasure in informing you that both the Lancashire Veterinary Medical Association and the Liverpool Veterinary Medical Association, having taken a deep interest in this question, have become satisfied of the desirability of such a society, and have unanimously resolved to form one. The question was brought before the Yorkshire Veterinary Medical Society by Mr. E. Friend, of Liverpool, on the 17th instant, when that society most heartily and unanimously resolved to join the above associa-

tions, and to form a similar society. It was further resolved that three members from each society should constitute a deputation, to meet at Manchester on the 1st Wednesday in September next, for the purpose of taking the whole question into consideration, and arranging the rules and constitution of the proposed society. In the mean time the members forming the deputations would be glad to receive practical suggestions from the body of the profession, for the purpose of enabling them to found the society upon as broad, enlightened, and useful a basis as possible. The deputations are as follow:

Liverpool: Mr. Lucas, Mr. Friend, Mr. Morgan.
Manchester: Mr. Lawson, Mr. Greaves, Mr. Simpson.
Yorkshire: Mr. E. C. Dray, Leeds; Mr. Secker, Knaresborough; Mr. Williams, Bradford.

To Messrs. Morton and Simonds.

To the above we have only to add our hearty wish for its perfect success. "In a multitude of counsellors there is wisdom;" and hitherto so much good appears to have resulted from combined action, that we entertain no fears as to the result.

OUTBREAK OF SMALLPOX IN SHEEP, AND A FATAL EPIZOOTIC AMONG CATTLE.

During the past month two epizootics of a fatal character have shown themselves, quite unexpectedly, in this country. Fortunately, of the first we have had considerable experience, as it had broken out on two former occasions; but of the latter we have, as yet, to learn something more of its pathology. The general symptoms resemble a malady in the ox not altogether unknown to us, but they differ therefrom in many of its leading features.

The smallpox in sheep has been quickly suppressed by prompt measures adopted both by the resident flockmasters and the Government. It did not extend beyond the flock in which it broke out. Its appearance, however, this time on the Southdowns of Sussex was equally as inexplicable as when the disease showed itself on the Wiltshire Downs.

The bovine disease assumed at its outset such a fatal

character that the attention of the Government was at once directed to it, and the Order in Council, which will be found in another part of our Journal, was at once issued, and one of us commissioned "to institute an inquiry into the nature, causes, laws of propagation, and best methods of treatment and prevention of the disease."

Since writing the above, an order has been issued by the authority of the Privy Council, dated Whitehall, July 24, which, after reciting the Act passed in 1850 to prevent the spreading of disease among cattle, and which has since been from time to time continued, says—"Whereas a contagious or infectious disorder, of which the nature is at present uncertain, has lately appeared, and now prevails among cattle, within the metropolis and in the neighbourhood thereof, and it is expedient to take measures for preventing such disorder from spreading," it is ordered by the Privy Council that notice shall be given of the existence of any cattle labouring under infectious disorder, within the City of London, in the limits of the metropolitan police district, "to the Clerk of Her Majesty's Most Honorable Privy Council in waiting at the office of Her Majesty's Privy Council at Whitehall; and it shall be lawful for the said clerk of Her Majesty's Privy Council, and for all such persons as he shall by writing under his hand authorise in that behalf, thereupon, and at all reasonable times thereafter, to inspect and examine all or any such diseased animals or animal, and to report to the Lords of Her Majesty's Privy Council all such information and particulars as to the nature or character of such disorder as may seem to him expedient for the purpose of enabling proper regulations to be made for preventing or checking the further propagation and increase of such disorder. Every person offending against this order, and omitting to give such notice or to permit such inspection and examination as aforesaid, shall for every such offence forfeit any sum not exceeding £20, which the justices before whom he or she shall be convicted of such offence may think fit to impose."

VETERINARY CONGRESS.

A SECOND Veterinary Congress is appointed to be held at Vienna, under Imperial Royal auspices, from the 21st to the 26th of August.

Besides the discussion of subjects connected with veterinary medicine which have an *international* importance, the congress will chiefly deliberate upon the Rinderpest, or contagious typhus of cattle, and rabies of the dog.

The Imperial Royal Austrian Railway Company, and the Imperial Royal Austrian Steam Navigation Company of the Danube, have declared that they will convey gentlemen attending the congress, and availing themselves of the second and third class of the railway,* and first and second place of

* The second and third class are almost equal to first and second class, there being a fourth class corresponding to our third.

the steamboats, to and fro, at half the ordinary fares, on showing their card of authorisation from the committee. Gentlemen who are desirous of availing themselves of these advantages will have to address Dr. Pillway, member of the committee, in order to obtain the cards of authorisation.

The Imperial Royal Ministers have decreed that those gentlemen coming from foreign countries to attend the meetings of the congress, and provided, besides their other documents, with the card of the committee, shall not be subjected to their luggage being examined on the frontier, but it will be at once forwarded to the custom-house at Vienna.

The authorities of the Imperial Royal studs have given orders that gentlemen going to the congress may visit the Imperial stud at Kladrup. Those whose route takes them through Bohemia, or Küstenland, and Krain, can avail themselves of the proximity of Kladrup station, on the northern line, or the Karst station, Prestrank, on the southern line, of the state railway. The museums and galleries of the capital will also be open exclusively to those gentlemen attending the meetings of the congress, on alternate days of the meetings. The production of the card of the committee will be necessary.

A visit to the Imperial Royal Agricultural Establishment of Instruction at Ungarisch-Altenburg has been arranged for the closing of the meetings, and his Imperial Highness the Archduke Albrecht has also permitted a visit to his useful and improved breed of cattle on his estate.

Extracts from British and Foreign Journals.

ON THE PRODUCTION OF THE SO-CALLED 'ACUTE CESTODE TUBERCULOSIS,' BY THE ADMINISTRATION OF THE PROGLOTTIDES OF *TÆNIA MEDIOCANELLATA*.

By James Beart Simonds, Professor of Cattle-Pathology in the Royal Veterinary College, and

T. Spencer Cobbold, M.D., F.R.S., F.L.S.

From the 'Proceedings of the Royal Society,' May 4th, 1865.

Neither of us having exhausted certain funds placed at our disposal for scientific purposes (in the one case by the Royal Agricultural Society through the governors of the

Royal Veterinary College, and in the other by the British Association for the Advancement of Science), we have united the resources which severally remained to us, and have instituted a series of experiments in helminthology. These experiments, we are happy to state, have proved for the most part, eminently successful; moreover, several of them not having been previously performed in this country, we have ventured to think that at least the first fruits of our combined research in this particular relation might not unfitly be submitted to the notice of the Royal Society.

The subject selected for the experiment which we now proceed to relate, was a fine healthy female calf, about a month old, living at the time on the milk of its dam. As we were unable to obtain possession of the dam, another cow was procured as a foster-mother, and the calf was placed with her in order that it might receive a proper supply of milk in the natural way. This plan was preferred to that of obtaining a weaned calf, as being better calculated to preserve the health and strength of the young animal. In the course of a few days the two animals became perfectly accustomed to each other, the calf taking nourishment as often as was requisite.

On the 21st of December, 1864, we administered to the calf eighty mature proglottides of the *Tænia mediocanellata*, mingled with a little warm milk in the form of a draught. The potion was taken readily, and the worm-joints probably entered the stomach in a perfect and unbroken condition. No alteration was made in the subsequent management of the animals, but a careful daily watch was kept upon the calf.

For some time no indications were perceived of disturbed health; but on the 6th of January, 1865 (the sixteenth day after the experiment), a careful observation showed that the animal, although lively (and taking its milk and likewise some hay with undiminished appetite), was nevertheless suffering from some persistent cause of irritation. It would often be nibbling at its legs and other parts of its body, and trying with its mouth and tongue to get at places which were beyond its ordinary reach. It would also frequently rub itself against the manger and sides of the loose box in which it was confined. Desisting from this, it would arch its spine and stretch out its hind limbs in an altogether unusual manner. It would also strain itself repeatedly, at such times voiding either urine or fæces, or occasionally both in small quantity. There was, however, no expression of suffering in the countenance, no disturbance of the breathing or of the circulation, no injection of the visible mucous membranes, no alteration of the temperature of the body, no "staring" of

the coat, nor rigors; in short, no indication of anything seriously wrong. These symptoms continued throughout the next day with little variation; on the third day they had nearly passed away, and by the fourth had entirely disappeared.

On the 25th of January, 1865, just five weeks after the first worm-feeding, two hundred more of the mature proglottides of *Tænia mediocanellata* were administered; but one hundred of these worm-segments had been previously immersed in a weak alcoholic solution, strong enough, it was feared, to destroy the vitality of their contained eggs. The other hundred proglottides were in beautiful condition, and for the most part appeared to be thoroughly mature. Again the calf took the feeding readily, and little or no force had to be employed in holding it during the administration. However, directly on being loosed, it was observed to show some symptoms of distress in the breathing, accompanied with trembling. The feeding took place at 3 p.m., and, as the night promised to be cold, it was placed with the cow in a closed and warm stable. On the following morning it was noticed that the tremors had somewhat abated, but the animal was evidently dispirited, and would every now and then grind its teeth as if in pain. Its appetite was much diminished. By the next day, however, all these diseased symptoms passed away, and the animal recovered its ordinary healthy aspect.

On the 1st of February, the seventh day succeeding the second worm-feeding, there was a decided return of the nervous irritability; but in a day or two these symptoms again declined. Nevertheless the animal was not quite right; the coat began to lose its natural and glossy appearance, and there was an evident loss of flesh.

February 8th.—A marked change for the worse has taken place. The animal is dull and dispirited; refuses all food excepting milk, and of this takes but little; it arches the back frequently, and stretches the limbs in a peculiar manner; the breathing and the pulse have increased, and at intervals slight tremors are observable, more particularly of the muscles of the neck and shoulders.

9th.—All the unhealthy symptoms are more marked. The pulse numbers 120, and the breathing 35 in the minute. The tremors are more continuous, and the condition of the animal is fast declining.

10th.—Still worse. The calf is so ill that we fear a fatal result. It takes little or no notice of the cow, and cannot be induced to suck. The eyes have a peculiar staring expression.

11th.—The severity of the symptoms has somewhat

abated this morning. The animal is rather more lively, and will now and then take a little milk. The breathing and pulse, however, remain rapid. The tremors, though still frequent, have diminished in intensity. Towards the after part of the day the improvement became more marked; therefore, instead of destroying the animal (as we had purposed in the event of its becoming much worse), we resolved to satisfy ourselves, by other means, as to whether the above symptoms were really due to parasite-invasion. Accordingly a small portion of the right sterno-maxillaris muscle was removed by operation, and this fragment of the flesh, although weighing only twenty-two grains, revealed the presence of three imperfectly developed cysticercus-vesicles. Each was about the size of a pin's head, but they displayed no trace of calcareous corpuscles, or of cephalic formation in their interior. On the assumption (afterwards, however, found to be erroneous) that all the muscles of the body might be similarly affected, and to the same extent, it was at the time calculated that the animal "entertained" some 30,000 of these artificially introduced "guests."

12th.—A further improvement has taken place, but the animal is still dispirited, the pulse and breathing continuing abnormally rapid. The eyes are less staring.

13th.—Improvement continues; breathing less rapid; the tremors have disappeared.

15th.—Pulse diminishing; breathing nearly normal; appetite good.

22nd.—Convalescence perfectly re-established.

Throughout the remainder of the month of February, and during the whole of March, the calf continued to maintain complete vigour, and, indeed, gained flesh so rapidly, that at the beginning of April it might readily have been sold to a farmer, to a butcher, or to a cattle-dealer, as a thoroughly sound and thriving young beast. The time having, however, arrived for determining the result of the experiment, the calf was slaughtered on the 3rd of April, by division of the right carotid artery. The operation was performed by Mr. Pritchard, who also during the subsequent *post-mortem* examination rendered us essential service. As before, so after its death, all present remarked the particularly healthy aspect of the animal, there being no external indications by which the most practised professional eye could have discovered the existence of internal disease. But for our previous trial we should ourselves have been doubtful of finding any entozoa within the flesh.

Immediately after the first incision along the median line

of the thorax a solitary cysticercus came into view, many others successively displaying themselves as the integument was being raised and dissected from off the left side of the carcass. No person in this country having hitherto witnessed such a demonstration as now followed, we may perhaps be permitted to express the feeling of astonishment which all shared on thus beholding hundreds of larval cestode parasites in the flesh of an animal not usually considered capable of harbouring "measles" after the fashion of swine.

Examined individually, the larvæ were enclosed in oval sacs, whose transparency permitted us to see, at or near the centre of each vesicle, internally, a minute white spot representing the so-called receptaculum capitis. On subsequent rupture of the cyst, a microscopical examination of the contained larva revealed the ordinary characters of the Cysticercus which produces the *Tænia mediocanellata*.

Speaking generally, it may be said that the connective tissue and cellular aponeuroses were very feebly invaded; but in certain situations, such as those occupied by the linea semicircularis and fascia lumbaris, several vessels were closely associated; moreover, as regards the muscles themselves, extensive parasitic invasion was prevalent only in the more superficial layers. It was likewise noticed, as obtains in the parallel case of Trichina, that the larvæ were disposed in the longitudinal direction of the muscular fibres, being at the same time more numerously grouped towards the points of osseous insertion or of aponeurotic attachment. Not a few large vesicles had inflamed and suppurated, the cysts being occupied internally by a thick green-coloured deposit.

Referring to the left side only, we noticed that all the breast-muscles (pectoralis major, pectoralis transversus, and pectoralis anticus) were much infested, but scarcely so fully as the more superficial panniculus carnosus. In the latissimus dorsi and trapezius the cysts were very numerous, rather less so in the combined levator humeri and sterno-occipitalis, somewhat fewer in the rhomboideus brevis and rhomboideus longus, and exceedingly scanty in the superior part of the scalenus, the remainder of the last-named muscle being entirely free. The lateralis sterni contained none; neither were any observed in the abdominal region of the serratus magnus, but several vesicles were lodged in the superficial cervical portion of this muscle. Not a few existed in the upper part of the complexus major and in the complexus minor, some also occurring in the longissimus dorsi; yet none were observed in the spinalis dorsi, in the superficialis costalis, or in the diaphragm.

Turning towards the neck-region, we found them abundant in the sterno-maxillaris, considerably less so in the splenius, only one in the hyoideus, several in the sterno-hyo-thyroideus, but none in the longus colli. All the other deep-seated muscles of this region, including the obliquus capitis superior and inferior, as well as the rectus capitis posticus major and minor, appeared free from any trace of the vesicles. On the other hand, all the superficial muscles of the face, such as the retractor anguli oris, orbicularis oris, and levator palpebrarum, gave abundant evidence of their presence, the vesicles being particularly numerous at the outer part of the masseter externus. In like manner their presence was only less strongly indicated in the muscles of the eyeball, such as the obliquus inferior, adductor and retractor oculi, also in the depressor oculi, one "measle" being placed between the tendon of this last-named muscle and the sclerotic coat. The ball of the eye itself contained no vesicles. A few were remarked in the substance of the genio-hyoideus and other muscles belonging to the tongue; but the lingual organ properly so called appeared to be entirely free.

As regards the anterior extremity, we found the Cysticerci very numerous in the teres externus and abductor humeralis, being scarcely less abundant in the spinatus anticus and posticus. They were likewise prevalent in the front part of the triceps extensor brachii, but altogether wanting behind and in the deeper portions of this muscle. A very few were remarked in the flexor brachii, whilst the subscapularis, teres internus, and coraco-humeralis, failed to reveal any. They were very abundant in the flexor metacarpi externus, less so in the flexor metacarpi medius, and comparatively scanty in the flexor metacarpi internus. The lower part of the combined flexor perforatus and perforans showed a few, several being likewise present in the accessorius ulnaris. They were rather more abundant in the extensor metacarpi magnus, also in the extensor et adductor digitorum, likewise in the extensor digiti externus, and scarcely less so in the extensor metacarpi obliquus; yet none could be discovered either in the anconeus or in the humeralis externus.

Over the haunch, and throughout the surface-flesh of the left hinder limb, the Cysticerci were particularly abundant, being numerous in the gluteus maximus, in the tensor vaginæ femoris, and most especially in the large triceps abductor femoris. They were little less abundant in the vastus externus, and in those limited portions of the gastrocnemius externus and internus which come near the surface. A few

vesicles were observed at the subcutaneous posterior section of the ischio-tibialis, also in the outer part of the biceps rotator tibialis and rectus femoris; yet none were noticed either in the gluteus internus and gracilis, or in the vastus internus and sartorius. In the flexor metatarsi and extensor pedis they were rather numerous, but, at the same time, comparatively scarce in the peroneus and flexor pedis perforans. Lastly, none were detected in either the psoas magnus or psoas parvus.

With the exception of the heart, none of the viscera showed Cysticerci, the lungs, liver, kidneys, spleen, and thymus gland, being absolutely free; neither were any discovered in the brain. In short, it may be stated that the internal organs of the body generally were perfectly healthy; and even as regards the heart itself, the rather numerous vesicles found there displayed only a very incomplete development. At first they looked as if they might belong to a separate swarm-brood; but a careful microscopical examination disproved this notion, and at the same time revealed some curious facts. In the heart none of the vesicles had attained one third of the size of those prevalent in the muscles, yet their age was doubtless the same; for although none of those examined displayed a well-formed head with the characteristic and normal number of suckers, yet one vesicle was found to possess three suckers, another having two suckers, and a third only a single sucker. Most of the vesicles were entirely suckerless, whilst those which had them showed other indications of abnormality. The suckers themselves were not perfectly formed, in most cases, and there were commencing signs of calcareous degeneration. In some instances the entire contents of the vesicles appeared to have been absorbed, leaving only faint white spots to indicate the situations where the cysts once where. Such, at least, is our interpretation of the phenomena observed; and, in this relation, we have only further to remark that the heart-cysts were not merely found at the surface of the organ, but were dispersed throughout its substance, one or two of the better-formed vesicles being lodged within the septum ventriculorum.

On the present occasion we do not propose to offer any lengthened comment on the results of this experiment, but rather to let the facts speak for themselves; nevertheless, to impart an aspect of completeness to our paper, we will offer one or two concluding remarks.

So far as we are aware, only three experiments of this kind have been previously performed on the calf—namely, two by

Leuckart, and one by Mosler. In two of these instances the experimental animal perished, whilst in the other case, as in our own, the creature barely escaped with its life. To our animal we administered a larger number of the proglottides than had been given even in Mosler's case; but, probably in consequence of the embryonic immaturity of the contents of many of the eggs, we did not get that fatal result which otherwise would inevitably have followed from a larger migration of the cestode-progeny. We believe that by far the greater proportion of the "measles" resulted from the second worm-feeding, in which case they would have come from the hundred proglottides not subjected to the action of alcohol. Although the characters presented by the earlier-developed morbid symptoms, as well as the time of their accession, induce us to attribute the diseased phenomena to the larvæ set free by the first "feeding," yet it is clear, from the feebleness of the symptoms manifested, that only a very inconsiderable number of embryos can have entered on their wanderings. In the second "feeding," however, the case is very different; for here all the circumstances connected with the subsequent and marked disturbance of the animal's health point unequivocally to the development of the peculiar form of parasite disease which Leuckart has designated as the "acute cestode tuberculosis."

From the number of young vesicles present in the minute portion of muscle removed by operation from the living animal, we had (in the pages of the *Lancet*) publicly announced our belief that we might ultimately find 30,000 Cysticerci developed in this calf; but as the larvæ were subsequently found to be almost entirely confined to the superficial muscular layers, it turned out that our calculation was considerably beyond the mark. Nevertheless from *post-mortem* data we estimate that there were between seven and eight thousand "measles" present, and one of us counted 130 vesicles at the surface of a single muscle.

Lastly, it only remains for us to express our thanks to those gentlemen who supplied us with the necessary experimental material, namely, to Dr. Greenhow for the first tapeworm employed, and to Dr. Anderson and Mr. Brookhouse (Nottingham) for the second and third tapeworms, which were given together at the second administration. Dr. Greenhow's specimen had the head perfect, both his and Dr. Anderson's examples being quite fresh. Mr. Brookhouse informed us that his specimen had been placed in "very weak spirit;" but it is clear that the worm had been injuriously affected thereby, and the ova had lost their vitality.

TYPHUS IN PIGS.

A LECTURE was lately delivered by Dr. Budd, of Clifton, at the Royal Agricultural Society's House, Hanover Square, Mr. Raymond Barker in the chair, "On a disease in Pigs lately prevalent in the Western Counties."

Dr. Budd said—I feel that, as a medical man, chiefly concerned with diseases in the human subject, I lay myself open to the charge of presumption in attempting to speak of diseases in animals before an agricultural audience, and especially in the presence of so distinguished a veterinarian as my friend Professor Simonds. I must rely for my vindication on the following facts: that the particular disease of which I am about to show some results is one of the greatest scientific importance; that although it has been incidentally noticed in veterinary and scientific journals, it has never, so far as I am aware, been scientifically and systematically described; and that within the last few years it has been the cause of enormous mortality among pigs in various parts of the kingdom—a mortality which is still proceeding, and which, if I may depend upon the statements of persons connected with the pig trade, is likely to affect materially the price of pork; and I need scarcely observe that in these days of dear meat anything which has such an effect upon an article that enters so largely into the food of the working classes is matter of national concern. Another motive for bringing this under your notice is, that the opportunities for prosecuting the inquiry further have passed out of my hands. The disease, which was apparently very rife in my neighbourhood at one time, has now died out; and I am extremely anxious that the few rudiments which I have brought together should not be allowed to perish, but be placed in the hands of more competent persons than myself, or persons having a larger field for investigations of this kind. It may simplify what I have to say if I at once state that the conception I have formed of this particular disorder is that it is of a typhoid character. Most of you, no doubt, are sufficiently familiar with the disease called typhoid fever, and sometimes gastric fever, in man. That disease is attended and characterised by a peculiar ulceration of the intestinal follicles. So with the disease in the pig; it, too, is a typhoid fever, characterised and attended by a peculiar series of ulcerations of the intestines, which are in some respects the very counterpart of the ulcerations found in the human in-

testines. But my idea is that the two diseases are not identical, or not interchangeable; that is, are not communicable from a man to a pig, or from the pig to the man, though they bear an exact resemblance to each other. The pig fever stands towards the typhoid fever in man in just the same sort of relation that smallpox in sheep stands to human smallpox. My first acquaintance with the disorder I owe to Professor John Gamgee, of the Veterinary College, Edinburgh. In August last he wrote me a short note, which stated that a very remarkable and fatal outbreak of true typhoid fever had occurred among the pigs in that neighbourhood; that the disease had been attended by ulcerations of the intestinal canal, the precise counterpart of those attendant on fever in man; that it had been imported into Edinburgh amongst stock brought from Wolverhampton, but had been extinguished by the measures which had been directed against contagion. He closed his note by offering to send me specimens, or a whole pig, if I desired it. Feeling that it was a case in which, if in any, it was advisable to "go the whole hog," I telegraphed to him to send me a pig; and accordingly he sent me one that had been dead thirty-six hours. The weather was very hot at the time, so that when the pig reached me it was in an advanced state of decomposition. That, however, did not prevent me from examining it, and the result was that I found the colon bore a complete cluster of ulcerations. I heard nothing more of the malady for six or eight months, when a friend of mine, a medical practitioner in the neighbourhood of Bristol, wrote me to say that the pigs in Clifton Main Workhouse were all dying of intestinal fever; that there was a lot of ten pigs that had taken the disorder, that six had died, and that the remaining four were not likely to recover. Next day I went over to see the patients, and had an opportunity—the only one I have had—of observing the disease in the living subject. I saw them from day to day until they had all died; and with regard to the disease in the living animal, I could not give you a better idea of it than by saying that it is the exact counterpart of typhoid fever in man. The phenomena are very nearly alike. There are one or two points of difference to which I shall presently refer; but they resemble one another very closely, only that this disorder in the pig appears to be more rapid in its course, and more deadly—killing, in fact, in a much shorter time. I will say a word or two on the history of these ten pigs. They had been purchased in Bristol market about a week before the first symptoms showed themselves, and when brought to the

workhouse they appeared to be in perfect health. In the course of four or five days one or two of them began to droop and exhibit signs of illness, and in the end all perished. The earliest death occurred on the fourth day from the observation of the first symptoms; but probably that was not the fourth day of the disorder. It is extremely likely that the earliest symptoms may have escaped observation, particularly in the first of the cases, and that the pig which died on the fourth day had probably been ailing for a longer period than that. However, that was the day assigned for the death of the first pig. The others died at various periods of the disorder, ranging from the eighth to the tenth, twelfth, sixteenth, and the longest survivor lingered until the twentieth day. The outbreak lasted in the whole about six weeks, which it is probably important to observe. I have said that the symptoms resembled in a general way those of typhoid fever in man. The pig began to droop and shivered more or less very distinctly, suddenly became very prostrate, lost its appetite, got thirsty, and seemed very unwilling to be disturbed. The master of the workhouse said he believed that in the first stage of the disorder these pigs suffered from headache; and though this seems to be a curious statement, I have no doubt that it was a correct one. For in studying two of them at that stage of the disorder, one could hardly fail, from their heavy look, the fixed way in which they held their heads, and the resistance they offered to their heads being disturbed, to come to the conclusion that they were suffering from headache. These various symptoms were generally attended by diarrhœa, which, from the first, was more or less profuse. If it does not invariably occur from the first, in all the cases I have observed diarrhœa never failed. Indeed, it soon became extremely profuse, and one of the leading features of the disease. The discharges were at first of a light yellow, and strikingly resembled the light cherry-yellow discharges that belong to typhoid fever in man. As the disease advanced various modifications in the colour of the evacuations ensued. They became more or less of a dark green, and towards the end in many cases of a deep chocolate or dirty-red colour, which tinge arose from the occurrence of hæmorrhage in the intestinal ulcerations. There was another symptom, and it is important in a disease like this, where investigations are new, to fix upon outward signs that may lead to its early recognition. This symptom I regret not having witnessed myself; but it occurred in all the pigs, and I am told that it is a constant symptom characteristic of the disorder in its very early stage. I do not

know on what day, but apparently it was the second, third, or fourth day, the skin of the pig, between and around the ears, became of a red colour, passing into various shades of purple or violet. This red tinge gradually spreads over the whole surface of the animal, and is especially conspicuous on the flanks and other parts not much covered with hair; and it appears to have earned for the malady a peculiar sobriquet. Two or three pig-factors visited these pigs, and they at once said, "Oh! we know this disease well enough; we call it the *soldier*," from a fancied resemblance in the skin of the pig to the military red. As the disease advanced, diarrhœa became very profuse; the prostration increased, and I fancy that delirium intervened. The pigs seemed to me to be quite out of their mind, if one may say so. In the later stages of the disorder there is another circumstance which appears to be more or less a characteristic of it. Many of these pigs became paralysed in their hinder extremities, and so weak as not to be able to stand. The evacuations became involuntary; the weakness gradually increased, and the animal sank. So much for the symptoms during life.

(*To be continued.*) 1/5 682

REPORT OF EXPERIMENTS MADE UNDER DIRECTION OF THE LORDS OF THE COUNCIL AS TO THE VACCINATION OF SHEEP, AND AS TO THE INFLUENCE OF SUCH VACCINATION IN PREVENTING SHEEP-POX.

By James F. Marson, Esq., F.R.C.S., Resident Surgeon of the Smallpox Hospital, and

Professor Simonds, of the Royal Veterinary College.

(*Continued from p.* 452).

Inoculation of Sheep.

Many objections have been advanced against the adoption of inoculation as a prevention of sheep-pox, which perhaps it is unnecessary to further discuss. Taking it, however, for granted that this system will not fall into disuse in the event of the reappearance of sheep-pox in England, we proceed to give the rules for its performance.

1st. The separation from the flock and removal to a distance of all the natural cases before commencing the inoculation.

2nd. The virus to be selected from the mildest possible cases, and taken when perfectly limpid and transparent.

3rd. One puncture only to be made when the virus is fresh and fluid; and not more than two or three punctures when it is dry on points, and a week or two old.

4th. The punctures to be made in the fleshy part of the inner side of the thigh, either with a needle or the point of a very small lancet.

5th. The animals to be divided into lots of about fifty, and the pens in which they are placed to have a space left between them of as large a size as circumstances will permit.

6th. The shepherd to be instructed to very carefully inspect the sheep daily, up to the sixth day, and forthwith to take away any found to be diseased.

7th. The operator himself to examine each sheep individually on the sixth day, with a view, not only to ascertain whether the inoculation has taken, but to the removal of every animal showing infection; such being a natural case. The animals should be, after this time, kept as quiet as possible; be well supplied with fresh water, in which a small quantity of the nitrate of potash is dissolved, and, if the time of year permits, green food should be given in preference to any other. In the further progress of the inoculated disease every confluent case should be removed and kept apart from the other sheep.

8th. Care to be taken that all uninfected flocks are kept at as great a distance as possible, and that all intercourse by persons or shepherds' dogs employed about infected sheep be prohibited.

During the late outbreak of the disease in Wiltshire the following facts were established with regard to inoculation. In the case of Mr. Harding; of Etchilhampton, whose flock consisted of 400 sheep, 82 natural cases occurred, and 33 deaths followed. Of the 318 inoculated animals only 1 died.

In the case of Mr. Simon Hitchcock, of Allcannings, 48 natural cases occurred in a flock of 291 sheep, and 12 deaths took place. Of the 243 inoculated animals, 7 died.

In the case of Mr. Neate, of Allcannings, 133 natural cases occurred in a flock of 983 sheep, and 50 deaths took place. Of the 850 inoculated animals, 27 died.

The exact proportion of the number of natural cases and deaths to that of inoculated cases and deaths, in Mr. Parry's flock, of Allington—the one first affected—could not be correctly ascertained, owing principally to the circumstances that when the disease appeared its true nature was not suspected, and that it had progressed unchecked from two to

three months before inoculation was had recourse to. The deaths, however, from the natural and the inoculated disease were, as nearly as could be made out, 50 per cent. of the former, and 3 per cent. of the latter.

It is nevertheless true, however, that inoculation often proves most destructive to sheep when badly performed and proper care is not bestowed on the animals. Many instances of this kind occurred in Norfolk in 1848, in some of which the mortality was as high as 20 per cent. From records, however, in our possession, of the inoculation of 6000 sheep in Norfolk, including the cases just referred to, we find that the average rate of mortality amounted to only 5 per cent. We have also a record of 7000 sheep, belonging to different flock-masters, which were inoculated at the same time in the eastern counties, and the deaths among them amounted to only 2½ per cent. on the average; this favorable result arising chiefly from the circumstance that the inoculations were carefully performed.

Indeed, Mr. Perry, V.S., of Swaffham, in his letter to the *Norwich Mercury*, dated November 1st, 1848, mentions an instance in which he inoculated 1209 sheep, with a loss of only eight by death.

(*To be continued.*)

ROYAL COLLEGE OF VETERINARY SURGEONS.

QUARTERLY MEETING OF COUNCIL, HELD JULY 5TH, 1865.

PRESENT:—The President, Professor Varnell, Professor Spooner, Messrs. Broad, Brown, Burley, Field, Hunting, Lawson, Lucas, Moon, Robinson, Silvester, Wilkinson, Withers, and the Secretary.

The minutes of the preceding meeting were read and confirmed.

The election of a Member of Council in the room of Mr. E. Braby, deceased, was then proceeded with.

Mr. Lawson begged to propose Mr. James Broad, of Paddington, as a Member of Council.

On the ballot being taken, Mr. Broad was declared to be duly elected.

Communications were read from the several gentlemen who had accepted the office of Vice Presidents, to which they had been elected at a former Meeting of the Council. Mr. Burley also acknowledged the honour of his election orally.

A letter addressed to the President was then read, which had been received from Sir G. Grey, enclosing a copy of a note addressed by the Austrian Ambassador, and also a copy of the programme of the Veterinary Congress to be held in August next at Vienna, in which a hope was expressed that Her Majesty's Government would appoint Delegates to represent this country, and that Sir George Grey be informed whether the Royal College of Veterinary Surgeons wish to send a representative to the Congress.

After considerable discussion,

It was moved by *Mr. Robinson*, and seconded by *Mr. Silvester*—

"That the Royal College of Veterinary Surgeons have no wish to send a delegate to the Congress at Vienna."

It was then moved as an amendment by *Mr. Hunt*, and seconded by *Mr. Broad*—

"That the Secretary be requested to communicate with Sir George Grey, stating the willingness of the Council to nominate gentlemen fitted to act as a deputation to the Veterinary Congress to be held at Vienna, provided that Government determine upon being represented."

The original motion having been put from the chair, was negatived, and the amended resolution carried.

A letter was also read by the Secretary, which he had received from the solicitor to the estate of the late Capt. Randall, of Lower Tooting, Surrey, who had bequeathed to the "Royal Veterinary College, London, the sum of one thousand pounds consols," desiring to be informed whether the corporate body made any claim to this bequest.

After some discussion on the subject, and a letter of explanation had been read by Professor Spooner in reference to the legatee,

It was moved by *Mr. Brown*, and seconded by *Mr. Moon*—

"That the Secretary write to the solicitor, informing him that the Council of the corporate body do not put in any claim to the bequest of Capt. Randall to the Royal Veterinary College."

An amendment was then proposed by *Mr. Withers*, and seconded by *Mr. Wilkinson*—

"That the solicitor to the College be consulted as to the legacy left by Capt. Randall to the Royal Veterinary College, London."

The amendment having been put by the President was negatived, and the original motion carried.

The Secretary reported that at the several Meetings of the

Court of Examiners held in London, thirty-three members were admitted from the Royal Veterinary College, and nine rejected.

That twenty-nine Members were admitted from the Veterinary Colleges of Edinburgh and Glasgow, and eight rejected. The names of the Members admitted were read, those who were rejected, and also the names of the Examiners and ex-officio Members who were present.

The Registrar reported the following deaths, viz.: Mr. William M'Kenna, of Belfast, his diploma dated January 6th, 1835; Mr. Edward Braby, a Member of the Council, and Treasurer of the Royal College of Veterinary Surgeons, London, diploma dated August 6th, 1833; Mr. William Henry Webb, of Thurlow, Suffolk, diploma dated June 1st, 1842; Mr. George Kirkham, of West Derby, diploma dated April 21st, 1843; Mr. Francis Cotterell, Royal Artillery, diploma dated May 14th, 1851; Mr. Adam Hampson, M.R.C.S., of Bolton-le-Moors, diploma dated May 23rd, 1850. Also recently Mr. Gavin Clarke, of Limerick, his diploma dated August 11th, 1847; Mr. Edward Darlington, of Armagh, diploma dated May 19th, 1852; Mr. James Rogerson, of Garstang, diploma dated January 22nd, 1827; Mr. John Hopkins, of Mildenhall, Suffolk, diploma dated May 2nd, 1861; and Mr. John Lythe, *half-pay*, Ordnance, diploma dated October 8th, 1805.

The letters of correspondence in connection with the Secretary of the Scotch Section of the Court of Examiners were then read.

It was moved by *Mr. Wilkinson*, and seconded by *Professor Spooner*—

"That the Secretary of the Scotch Board be requested to furnish the Council with the names of the pupils holding the Highland and Agricultural Society's Certificate, who had presented themselves at the recent examinations, and had been rejected by the Scotch Section of the Court of Examiners."—Carried.

The Secretary laid on the table a work on Parasitic Diseases, by Professor Simonds; also the last edition of a Toxicological Chart, by Professor Morton, both of which were presented to the Library of the College.

It was moved by *Mr. Wilkinson*, and seconded by *Mr. Moon*—

"That the thanks of the meeting be given to those gentlemen for their kind contributions."—Carried.

A letter was read which had been received from Professor Morton, thanking the Council for the confidence placed in

him in reference to the specimens of drugs which he had laid before the students at the late Examinations. He was glad to learn that the plan had also met with the approval of the Members of the Examining Board to which he was attached. He now begged to present to the Royal College of Veterinary Surgeons those specimens, as a nucleus for a collection of articles of the Materia Medica, expressing a desire that a fitting place be appropriated for their reception; that they be put in suitable bottles, and placed on shelves with enclosed glass doors in the library.

It was moved by *Professor Spooner*, and seconded by *Mr. Wilkinson*—

"That the thanks of the meeting be awarded to Professor Morton for his liberal contribution—that a suitable place be made for the reception of the drugs as suggested—and that Professor Morton's letter be entered on the Minutes."—Carried.

It was moved by *Professor Spooner*, and seconded by *Mr. Wilkinson*—

"That a book, entitled 'Oliphant's Law of Horses,' be purchased as a work of reference for the use of the library." Carried.

A letter was then read from Mr. Bushman, Veterinary Surgeon in the United States government service at Giesborough, Washington, who had unfortunately lost his diploma, and now applied for a duplicate: he informed the Council that he had advertised, and offered large rewards for its recovery, but without success.

After some little discussion,

It was moved by *Professor Spooner*, and seconded by *Mr. Lawson*—

"That a similar certificate be granted to Mr. Bushman as had been previously given to Mr. Hickman, who lost his diploma during the Indian mutiny: and that it set forth that Mr. Bushman is a Member of the Royal College of Veterinary Surgeons."—Carried.

The Secretary laid upon the table three portraits of Professors Morton, Varnell, and William Robinson, Esq., which had been presented to the Council by Messrs. Harding and Co., artists and publishers, Southampton Street, Strand.

It was moved by *Mr. Wilkinson*, and seconded by *Mr. Coates*—

"That the thanks of the Council be conveyed to Messrs. Harding and Co. for the same."—Carried.

The Report from the Finance Committee and the Quarterly Balance Sheet of the Treasurer's Account was submitted.

The current expenses for the quarter amounted to £64 3*s.* 5*d.*, which they recommend should be discharged.

It was moved by *Professor Spooner,* and seconded by *Mr. Robinson*—

"That the Report and the Treasurer's Quarterly Balance Sheet be received and adopted."

Cheques were ordered to be drawn for the current expenses.

The reappointment of Committees for the year was then proceeded with.

The Finance Committee to consist of Professor Simonds, Messrs. Wilkinson, Moon, Harpley, Harrison, and Field.

The House Committee to consist of Professor Spooner, Messrs. Mavor, Withers, and Harrison.

The Parliamentary Committee to consist of Professor Varnell, Messrs. Ernes, Mavor, Moon, Harpley, Harrison, and Secker.

By order of the Council,
WILLIAM HENRY COATES,
Secretary.

LIVERPOOL VETERINARY MEDICAL ASSOCIATION.

OFFICIAL REPORT.

(*Concluded from* p. 470.)

THERE are several cases recorded in which actions have been brought against veterinary surgeons for want of skill and attention. And really there has generally been such stupid blundering and mismanagement displayed in these cases, that one cannot help feeling that he would have to strain a point to appear in court on the same side with them.

I think, gentlemen, you will have perceived that, as far as my opinion is concerned, I consider no veterinary surgeon ought to be held responsible for a prick in shoeing, or any of its concomitant circumstances. In the first place, all the evidence adverse to the defendant in the case must come from some other party, as no one employed could be of avail for the plaintiff; for even if he could prove that a smith had lamed a horse wilfully, it would at once clear the master from any legal responsibility in the matter. This much Oliphant assures us of. And if we are ever called upon to examine a horse under these circumstances, we must not forget that, however we may value ourselves as to the correctness of the opinions we may form of the matter, yet our conclusion can only be an inferential one. No person can possibly say that some of the

causes mentioned may not have operated to defeat the skill and attention of the operator.

This, then, I consider, is one of the cases in which unanimity of opinion amongst ourselves is most desirable.

Accidents from giving medicines, when administered at any rate in the usual and approved way, ought to be another exemption for us. So ought accident in the performance of operations, or the preparing for them, when conducted according to rule, also exempt us from liability.

Many years ago I wrote to the *Veterinarian*, urging the necessity of veterinary surgeons forming an association for their mutual protection in these cases. You all know the extreme difficulty of getting a scheme of this kind, or, in fact, of any kind, however good, perfectly organized, and will not be much surprised that this was laid under the table. But I have thought lately it might easily be carried out in these associations if, after due and careful consideration, a clause were added to the rules enabling any member who might be forced into litigation under such circumstances, as we have been supposing, to apply to the association, who, after thoroughly investigating his case by a small committee (specially appointed for the purpose), might, in any doubtful or indefensible case, give him its best advice and assistance; or in any case that might, on principle, admit of a defence, might get for him the best legal advice, and find him the best veterinary evidence obtainable for his successful defence; each member of the association, or associations, supposing they choose to unite for this purpose, paying his quota of expense equally, or in any way previously approved by the rule made.

The President then called on Mr. Greaves, of Manchester, to open the discussion, who, in doing so, made the following remarks:

I do not rise, Mr. President and Gentlemen, because I presume the observations I am about to make possess anything new, but because I consider it to be the duty of every member of these associations to use his intelligence, and express his views for the benefit and general good of the association. An idea of great value may occur to one member which may not occur to any other; and if a valuable idea strikes each member, and is expressed, much valuable information is by this means diffused, knowledge accumulates, and science is advanced. The subject now before us for consideration, although most useful and valuable to study, does not enter into the category of scientific questions. Unfortunately, it does not, as a rule, originate within the region of reason or judgment, but it too often commences and is fastened in the domain of mere feeling and passion. What may appear perfectly just and fair from the point of view taken by the plaintiff appears equally unjust and unreasonable from the point of view of the defendant; hence it is that they are not, as a rule, the most fit and proper parties to judge the question. An impartial man, with clear perception, often at once detects the flaws of the case, and arrives at a fair and truthful

decision. I can easily conceive a number of circumstances in which a veterinary surgeon might be dragged into a difficulty by a litigious employer; and if imprudence be evinced in conducting the case, the surgeon may be mulcted in considerable damages. But in most instances of this nature fair common-sense can discern whether such a case admits of a defence or not. I will suppose a case. I am requested to examine a valuable horse as to soundness, and upon my decision the gentleman buys or refuses the horse. I pronounce him sound, and he is bought. Soon after, however, he shows lameness, or fails in his health. I give an opinion that it is of slight or trifling importance, and the animal will soon be right again. I will presume it a case in which almost every experienced intelligent practitioner would have at once coincided; but somehow or other the case does not go on straight, for we all know there are some cases that will not go as we wish, do what we may. Well, the case goes on from little to much, and in the end the horse, becoming useless, has to be made away with, or he dies. The owner now turns upon me, and declares I ought to be held responsible, since it was on the faith of my judgment he bought the horse, and in which, in his opinion, there was a decided error of judgment. Now, I can conceive such a case, and one in which the practitioner is to blame, where the evidence showed glaring incompetence in the first place, and gross neglect or ignorance in the second place. And in such a case, whatever defence was set up, it must end in failure. Again, I can see a case in which the practitioner is wholly irresponsible; where sound judgment had been exercised at the first, and strict attention and correct treatment been observed all through the case. In such an instance as this it is only creditable to the profession that these associations should become interested on behalf of such a one, and protect and defend him. I can also conceive of instances of horses incurring accidentally injuries in shoeing, or by casting for an operation. In both cases, if glaring and gross carelessness or incompetence is evident, I do think the practitioner cannot be defended. If for instance, the horse is an unfit subject to be cast, and violence be employed, or if in shoeing the smith is proved to be drunk, or you allow an inexperienced lad to nail on the shoes. But, on the other hand, if the horse was a fit subject, and proper care were exercised in casting him, or in the case of shoeing it is proved that you employed a competent man, and he was exercising a proper degree of care, in such cases as these I am of opinion they will admit of defence, and these associations would only be acting in consonance with the dignity of the profession and of science to protect that member. I can conceive, again, of vicious bad horses to shoe being lamed, or animals having thin bad feet being lamed, in which no man, however careful or however competent, could shoe them without incurring great risk, if not causing lameness. In such cases, if the owner had incurred any responsibility by having given orders for the animal to be shod, knowing of the risk, the veterinary surgeon hould be held irresponsible, and it becomes the duty of these

associations to protect him. I cannot conclude without alluding to trials in horse causes. How lamentable it is to witness how much partisanship will warp the judgment and sway the opinion of the practitioner! Few know how earnestly I protest against this, and how much and strongly I desire that each opinion in every case should stand purely by itself, uninfluenced by any knowledge whatever as to whom the horse belongs, or whether any other person has examined him before or not.

The discussion then became general, most of the gentlemen present expressing their opinions fully and freely on the question; and such was the interest felt in the subject under discussion, that the time for closing the meeting had arrived before it was one half exhausted. Before closing, however, it was proposed, seconded, and unanimously carried, that the President appoint a small committee to correspond with the Lancashire Veterinary Medical Association and the Yorkshire Veterinary Medical Association, in order to ascertain their opinion as to the advisability of the formation of a Veterinary Legal Protection Society.

After the usual vote of thanks the meeting broke up.

Mr. Haycock will read the next paper, on "Canker in the Horse."

GEORGE MORGAN,
Hon. Sec.

NORTH OF ENGLAND VETERINARY MEDICAL ASSOCIATION.

THE usual quarterly meeting of this society was held on Friday, the 7th July, at the Crown and Thistle Hotel, Newcastle-on-Tyne. The President, Mr. Hunting, in the chair.

Mr. Wm. Marshall, V.S., Glanton, near Alnwick, was admitted a member of the society.

The President called the attention of the members to the necessity of appointing an officer in the room of the present Hon. Sec., Mr. Armatage having tendered his resignation in consequence of his required removal from the district; when, after due consideration, and various propositions being made relative thereto, it was ultimately decided not to accept such resignation until the annual general meeting, when the appointment of a successor will be fully proceeded with.

After the conclusion of other routine business, some remarks were made by Mr. Armatage, on the "Functional Arrangement of the Digestive Organs of Ruminants," giving rise to considerable debate, in which Messrs. Wilkinson, Thompson, McGregor, Marshall, Dudgeon, Scott, the President, and others, took active part.

A vote of thanks proposed to the President and Secretary respectively, and suitably acknowledged, closed the proceedings.

Mr. McGregor will bring in a paper at the next meeting, to be held at Durham, on the 20th October.

THE WEST OF ENGLAND VETERINARY MEDICAL ASSOCIATION.

Mr. Dyer, of Torquay (late of Waterford), issued circulars to all the members of the profession residing in the western counties whose names are found in the Register of the Royal College of Veterinary Surgeons, requesting them to meet at the Guildhall, Plymouth, on Thursday, the 20th of July, at two o'clock p.m., for the purpose of forming a Veterinary Medical Association, similar to those existing in Lancashire, Yorkshire, and elsewhere. How far Mr. Dyer succeeded, the following report will show.

The following members of the profession assembled at the Guildhall, by the kind permission of his worship the Mayor (C. Norrington, Esq.):—W. Raddall, Plymouth; J. F. Bickford, Kingsbridge; T. D. Broad, Bath; T. Barrell, Keynsham; G. Bodington, Cardiff; R. Hunt, Birmingham (Assistant Veterinary Surgeon to the Royal Agricultural Society); J. J. Collings, Plymouth; J. B. Heath, Totnes; G. W. Lamb, Liskeard; E. Hire, Penzance; G. Arnall, Cameford; W. Helmore, Stratford, and R. H. Dyer, Torquay.

Mr. Dyer proposed that Mr. Raddall take the chair, which was seconded, and carried unanimously.

Mr. Dyer then addressed the members in explanation of the course he had adopted in naming Mr. Raddall as Chairman, and himself Honorary Secretary *pro tem.*, which might by some present be considered a premature act; but, taking into consideration the fact of one failure having occurred, he was anxious to bring the subject before them in a tangible form before inducing gentlemen to leave their homes. He considered that, as Mr. Raddall originated the idea of forming these societies, the compliment might with great propriety be paid him of asking him to take the chair on this occasion, and to give an address setting forth the objects for which they were assembled, and, further, that Plymouth be the first place of meeting.

Mr. Raddall proceeded to observe that, some fifteen years since, he wrote an article which appeared in the *Veterinarian* advocating the establishment of local societies among the members of the profession, but it had no response, and being at the time engaged in active duties, he did not agitate the subject further. He, however, took credit to himself that indirectly he might have been the feeble instrument of originating the scheme; with what success most of them knew by having read reports in the *Veterinarian* from time to time of the Lancashire, Yorkshire, and other societies. In March last he received a letter from Mr. Dyer, asking if he would assist in the formation of a local society for the West of England. They subsequently had an interview, and he (Mr. Raddall) then agreed to do so. Although he was no longer in the profession, yet he felt

a deep interest in it. They were aware that local societies had been established in the North of England and in Scotland, and though they were all comparatively of tender age, still it was difficult to over-rate their value. There were many advantages resulting from the establishment of provincial societies. Amongst the most striking was the better understanding that would exist among its members, for by intercourse mutual respect would arise, which would gradually grow into interest and a devotedness to each other's welfare. Besides this, in those days, when such facilities are offered for quick transit from place to place, ready opportunities would present themselves, where they had cases under treatment on which they felt anxious, to solicit the advice and friendly opinion of another veterinary surgeon. This would have the effect of riveting closer confidence in their employers, and beget a clearer understanding and perseverance in themselves. At times, also, they might be glad to visit a remote part of the country for a day or two; and if a true and tried friend could be secured to attend any new or dangerous case during absence, they could well understand the confidence and elasticity of mind with which they would leave home. Such a society as they intended to form would establish a bond of union among the veterinary surgeons, and would remove those jealousies which had formerly existed. It was, perhaps, worthy of consideration whether such societies should not periodically publish a list of persons holding diplomas of one of the recognised colleges, and residing in the area of the society. The public would then be able to ascertain who were unqualified. They were probably aware that a number of men practised in the country who palmed themselves off as members of the College, but who had never seen, much more studied, at that institution, and thus the regularly qualified practitioner was injured, and serious loss resulted to those who employed the unskilled practitioner. At each quarterly meeting of their society scientific subjects would be discussed, essays read, an interchange of views and ideas would take place, and a spirit of emulation would be aroused that would elevate the mind, and give rise to deep thought and research, which would not exist in a state of greater seclusion. Any new form of disease of an epidemic or other character would be described and discussed, so as to prepare the mind of the professional man how to treat it, should it ever appear in his own locality, for disease frequently showed itself in one place a long time before it was seen or heard of in another. He would now refer to a subject with which the pecuniary interest of every member of the profession was more or less connected. He alluded to the formation of protection societies. They occasionally had cases which, with the utmost care and skill on the part of the operator, were attended with serious and probably fatal results. A demand was then made on them for probably double or treble the value of the animal. It was to meet cases of that kind, and individually to relieve professional men from submitting to overbearing demands for compromise rather than go through the fiery ordeal of a tedious suit at law, that the protection society was established. If

persons knew that it was a society which they had to fight instead of an individual member, they would be deterred from taking any steps at all. There was one branch of business with which the veterinary surgeon commonly connected himself fraught with injuries, real or imaginary, caused by those in his employ, and which more than any other had given rise to legal proceedings. He alluded to horses lamed and pricked in shoeing. He imagined that the reasons why the owners of horses so lamed tried to seek compensation in damages were twofold—first, because more was expected at the forge of the veterinary surgeon in the way of care, skill, and exemption from accident, than at the forge of the farrier; and secondly, because, as a rule, the veterinary surgeon was the man of most substance, and more likely to be worth sueing than the common farrier. His own experience of the forge was that it had given him more anxiety and annoyance than all his other practice put together. He did not think the forge was by any means calculated to raise the position of the profession, it not being compatible with professional standing, but it might be looked on in the light of an interference with the legitimate rights of a class of handicraft men, who were sure to take umbrage at it. In conclusion, Mr. Raddall urged those present to lend a helping hand and a willing heart to establish a society in the district.

The above remarks by the Chairman were attentively listened to, and at their close a vote of thanks cordially awarded him.

Mr. Raddall was then elected President; Messrs. Bodington, Bickford, and Broad, Vice-Presidents; Mr. Dyer, Honorary Secretary and Treasurer.

Professors Spooner, Simonds, and Varnell, and ex-Professor Morton, and Mr. Hunt, were elected Honorary Associates.

The Secretary then proceeded to take down the names of those who wished to become members of the association, which proved to be all the gentlemen present. In addition to names already mentioned, are—Mr. T. Fry, of Ashwater; Mr. Heard, Tavistock; Mr. Pearce, Whitchurch; Mr. T. D. Gregory, Bideford; Mr. S. J. Wills, Blandford; and Mr. W. Ferris, Dartmouth, late of Torquay.

Messrs. Hunt, Bickford, Broad, Helmore, and others, addressed the meeting at some length, after which a copy of the bye-laws was ordered to be prepared and submitted to the members of the association.

It was proposed by *Mr. Bodington*, and seconded by *Mr. Barrell*, that Bristol be chosen as the next place of meeting. An amendment was proposed by *Mr. Collings*, and seconded by *Mr. Lamb*, that Exeter be the place of meeting in October next. The amendment was adopted. The Secretary was requested to communicate with Mr. Drake, of Exeter, and to arrange for the next meeting.

A vote of thanks was accorded to the Mayor for the use of the Guildhall.

The gentlemen present adjourned to an excellent dinner at the Globe Hotel, where they were joined by Professor Varnell, Mr. James Simonds (son of the professor, who was unavoidably absent),

and Mr. Cottam, of London, who were invited as guests. Mr. Raddall in the chair.

The usual loyal and patriotic toasts having been drunk with acclamation, the "Health of the Mayor of Plymouth" was proposed by the Chairman, who dilated on the ready assistance the Mayor had given in establishing the association, and the energies he had put forward in the promotion and advancement of the profession.

The healths of the Chairman and of Professor Varnell were then drunk and responded to in a suitable manner, and afterwards that of Mr. Dyer, the Secretary and Treasurer, was proposed. In responding, Mr. Dyer made some remarks on the origin of the formation of veterinary associations, with some comments on the decline of the movement at first. He said that the matter was brought forward in that district several years since by their President on the present occasion, but no arrangements were effected for the carrying out of his suggestions. The want of an association had been severely felt, and he, being assisted most cordially by other gentlemen, had brought matters to their present auspicious state. Several of the profession had been enrolled as members, and he had not the least doubt that if the benefits that would be derived from their meeting were justly appreciated, the object they all had in view would be obtained.

"The Royal College of Veterinary Surgeons" was the next toast proposed, and with it was coupled the name of Professor Varnell, the President thereof, who returned thanks, and said, with respect to the College, it was due to his predecessors in the Presidential chair to state that it had steadily progressed, and he hoped, through the united efforts of those in office, that it will still continue to flourish. He thought the medical associations which were springing up would be the means of effecting still greater improvements and stimulate the profession to yet further exertions. He offered a suggestion at the last meeting of the council, which he considered would elevate the position of the profession. It was one that had emanated from, and worked beneficially in, the College of Surgeons, namely, that lectures should be delivered periodically by the members on general subjects, but no discussion was to ensue, as each would draw conclusions from what he heard. There were a number of veterinary surgeons distributed about the country who were not members of the body corporate. This was deeply to be regretted, and he hoped that these non-members would make up their minds to become members of the College. He deemed this advisable and even essential, for although it might be felt humbling to some to be examined, it would nevertheless ultimately be a source of gratification to them, a benefit to the profession at large, as well as a means whereby harmony would be ensured. There were several things that might be suggested which would prove advantageous to them as a body, but the most important and all-essential one was that harmony and good feeling should ever prevail. He thanked the meeting for the compliment paid him.

"The Provincial and Veterinary Local Associations" having been proposed,

The Chairman gave "The West of England Veterinary Association," which he designated the toast of the day. He said that after what had transpired he was quite sure nothing would be required from him in explanation of the specific benefits to be derived from the association which, through their instrumentality, had then been formed. He was convinced that much good would emanate from it, and that it would be appreciated by those of the profession within the district. He coupled with the toast the name of Mr. Bodington.

Mr. Bodington returned thanks in suitable terms, declaring his conviction that these associations would do much good to the profession generally. He said he was proud to think the present one had been formed, which it was principally through the energy and zeal of his friend Mr. Dyer, who had done his work nobly. For his part, his heart and soul were in the cause, and he would follow them wherever they went, if he was spared.

The Chairman next gave the toast of "The Royal Agricultural Society of England." This society, if regarded in a national or social point of view, was one of great importance. It was a stimulus to those engaged in agricultural pursuits to improve their implements of husbandry, and no person could but admire the manner in which the society came forward in the matter of awards. It had, he thought, created a revolution in the science of agriculture, and that they, as a body, were much indebted to the society.

"The Ladies" and "The Press" were then drunk amid cheers, and the meeting separated.

Veterinary Jurisprudence.

CUTTING OFF THE HORNS OF CATTLE.

Prosecution by the Dublin Society for the Prevention of Cruelty to Animals.

An investigation was made, on Monday, May 29th, at the Blanchardstown Petty Sessions, into a charge preferred against Mr. Patrick Kennedy, of Clonsilla, at the instance of the Society for the Prevention of Cruelty to Animals, for having cut off the horns of a number of cattle, his property, thereby causing the animals extreme pain. The Court-house was filled by a crowd of people, who watched the proceedings with interest.

Constable Talbot, of the constabulary, deposed that on the 11th of May he visited the defendant's lands at Clonsilla, and he there saw twenty-one head of cattle lying on the ground, with their horns cut off close to the skull. There were holes in the head, where the roots of the horns had been taken out, and the cattle appeared to be suffering extreme pain. Although he had been at the battles of the Alma and Inkermann, he never saw anything that affected him so much.

Professor Ferguson, veterinary surgeon, deposed that he had also seen the cattle, which were suffering greatly, in consequence of the bungling manner in which the operation had been performed. As reasons for depriving the animals of their horns, he stated that cattle without horns were regarded more favorably in the English markets; and that the loss of the horns occasioned a less development of the muscles and the coarse parts of the neck, and increased the nutriment. He said he could have performed the operation without causing much pain.

Two witnesses, summoned to prove the ownership of the cattle, declined to give information, as it might tend to criminate themselves. An adjournment was asked for and refused, and after some discussion the case was dismissed, the ownership not having been proved; but the Court intimated that further evidence might be procured in several similar cases that were pending.—*Times*.

Subsequently to the disposal of this case, the Society instituted further inquiries, the result being that the case was again brought before the Blanchardstown Petty Sessions, at its sitting on June 12th, when Professor Spooner, of the Royal Veterinary College, London, attended, and gave evidence on the part of the Society. The magistrates present were—Thomas Thompson, D.L., chairman, Alderman Mackey, J. G. Rathbourne, and Maurice Flanagan, Esqrs.

Saunders's Daily Advertiser, in its report of the investigation, says—

Mr. Patrick Kennedy, a respectable farmer, residing at Clonsilla, in the county of Dublin, was summoned by Mr. F. Brady, Secretary of the Society for the Prevention of Cruelty to Animals, for having, at Clonsilla, on the 8th day of May last, procured to be ill-treated and tortured, an animal, by having its horns sawn off. On the last Court day the defendant had been summoned for twenty-one similar acts of cruelty, but in consequence of a failure to prove that the cattle belonged to him the first case had been dismissed and the remainder adjourned till the next Court day, when the hearing was resumed.

Mr. Clay appeared for the Society, and Mr. Ennis for the defendant.

Mr. Clay said that on the last Court day they had heard all the evidence in this case, and, with a view to shorten the proceedings, he would ask Mr. Ennis was his client prepared to admit whether the acts complained of had been done or not?

Mr. Ennis supposed that the Court had heard of the proceedings at Raheny the other day, where the magistrates had decided to

inflict a nominal fine, at the instance of Mr. Kennedy, in order to allow him to appeal from that decision. On the part of his client, he would now submit to a similar fine, on condition that their decision in the other cases should be held over until the appeal to quarter sessions would be decided, and if it went against him he would willingly pay the amount.

Mr. Clay said this was a different case from that at Raheny, as there were twenty-one summonses to be tried, and they were met in a fairer spirit there than at this Court on the last day. He wished to denounce the trick that had been played on them at the last sessions, when Mr. Kennedy, after stating that he would not stand on any technical defence, caused the first summons to be dismissed when there was a failure to prove ownership.

Mr. Ennis denied that such a promise had been given unconditionally.

Mr. Brady, plaintiff, was then examined, and deposed that he saw the twenty-one head of black cattle having their horns cut off close to the head, part of the skull being removed with them; there were holes in the skull, from which blood and matter were oozing; having seen this, he called upon Mr. Kennedy, the defendant.

Mr. Ennis objected to what had passed at a private conversation being repeated as evidence.

Examination resumed.—He could not tell positively whether the animals were at the time he saw them suffering pain; but his opinion was that they were.

To the Court.—That was four days after the time.

To Mr. Clay.—I decidedly consider that it was a most barbarous act, and one which could not be performed without a great deal of cruelty.

Cross-examined by Mr. Ennis.—On the occasion I called upon Mr. Kennedy I did not object to let him see Professor Ferguson's report; I had not the report then; he said he knew Professor Ferguson well, and that he would see him about it. When Mr. Kennedy asked me was there to be a prosecution, I told him there was, and I refused to let him see Professor Ferguson's report; he did not say that in that case he would defend himself as well as he could; he told me that no technical advantage would be taken, but that he would meet the case fairly as between man and man; I pledge my oath that he did not say that if I showed him the report he would wave every technical objection; positively there were no warm observations passed between us—none whatever; on the contrary, Mr. Kennedy said he could not blame me for it, but that the committee was doing what was wrong, and I told him distinctly that if the committee did not do it I would have nothing to do with the Society.

Constable Talbot, examined by Mr. Clay.—From private information I received on the 11th of May, I proceeded to Clonsilla, and on the lands of the defendant we found twenty-one head of cattle with their horns cut off, blood running down the sides of their heads, and matter oozing out from where their horns had been;

there were large holes in the head. When I saw the cattle they appeared to be suffering the greatest pain; they were lying with their heads stretched out on the grass, and when I went up to them none of them stirred; I say that they appeared exhausted with pain, and they were moaning and turning their heads from side to side on the grass.

Professor Charles Spooner, examined by Mr. Clay.—I am Principal of the London Veterinary College; I have heard the evidence given by Mr. Brady and Constable Talbot.

You heard that the horns were cut off close to the skull, removing a portion of it, and leaving cavities in the head—will you state whether that is an act of cruelty or not?

Mr. Ennis objected to the evidence of Professor Spooner, who had not seen the animals, and could only act on what he had heard.

Mr. Clay argued that he was entitled to call Professor Spooner, who was a "skilled witness."

After a short discussion, the question was allowed to be put.

Mr. Clay.—From the description you have heard of the state of these animals by the two witnesses, can you say whether it was an act of cruelty?—I think it was an act of extreme cruelty.

Can you assign any reason whatever for these cattle being treated in that way?—I cannot, except that it may be for the purpose of endeavouring to convert a horned animal into a polled one, thereby enhancing its value, by deceiving parties.

Mr. Ennis objected to this class of evidence.

Mr. Clay.—I ask you now, if, in the whole course of your experience, you ever heard of cattle being so treated unless there was something wrong with them?—Certainly not.

Is it the practice in England to do so, or have you, in the whole course of your experience as a veterinary surgeon, ever so treated animals, or heard of their being so treated, to improve the breed of stock?—Never; I never heard that the practice prevailed in England of removing the horns of animals so old.

Mr. Ennis said that this was all negative evidence, and objected to it.

Professor Spooner.—I have said that I consider this to be a very gross act of cruelty, and for this reason—that the horns of oxen, unlike those of the deer tribe, have a large process of bone growing out from the bones of the head, on which they are placed. This bone is covered by a very vascular and sensitive membrane, so that to cut the horns off below their tips, where they are simply composed of horny matter, must necessarily give rise to great pain, and the nearer the operation is performed to the skull the greater must be the suffering. The bone of the horn is hollow, having several cells, which extend into similar cavities in the bones of the head. These cavities are lined with a delicate and sensitive membrane, which on direct exposure to the air, must become inflamed, and occasion great pain, rendering the animal liable to inflammation of the brain or lock-jaw. I therefore consider the operation to be one of extreme cruelty.

To Mr. Flanagan, J.P.—It cannot be considered less painful than cutting off dogs' ears, which operation I also consider an act of great cruelty.

Mr. Clay.—Is the flesh of the animals likely to improve by having the horns cut off?—Certainly not; it would be preposterous to say so.

Supposing you were called upon to perform the operation, whether from fracture or disease, would you take any other measures than cutting off the horn with the saw?—I should do the same with it as with a man's leg; I would cut off as much as would answer, and no more, and, having removed it, would stop the bleeding, and apply such remedies as would properly heal the wound.

Mr. Clay read the opinion of the late Mr. Youatt, which was corroborative of the opinions just expressed by Mr. Spooner.

Cross-examined by Mr. Ennis.—Professor Ferguson was a pupil of mine; I should be surprised if I heard that he said he could perform the operation of removing the horns without pain; I am not aware that he gave that evidence. I have said that the operation would not improve the condition of the beast. I should be surprised if Professor Ferguson gave evidence that it would; I am astonished if such evidence was given by a professional man; I would not perform such an operation if called upon to do so. If I did it for the purpose of curing the animal of any disease, it would not be cruel. If I did it for the purpose of improving the condition of the animal, I should be acting under an error. The act would not be so offensive if I did it without the knowledge that I was inflicting pain. I don't think it would excuse the act if it was done to improve the condition of the beast. There are many such acts done with that intention which I consider unjustifiable.

Mr. Clay said that he had brought one of the first butchers in Dublin to prove that he never heard of such a practice.

Mr. Brady said he had inquired from the Inspector-General of Constabulary, and inquiries had been made from the men to the same effect, and the result was they had ascertained that, with the exception of one county, in which it was carried on by stealth—Roscommon—he could not find that the practice was followed in Ireland.

Mr. Ennis said he appeared for Mr. Kennedy, who begged to say that it was not he who introduced the system into the country, and that he had not the slightest idea that the operation complained of gave the pain that it was alleged to give by Professor Spooner. On the contrary, he now was determined not to persevere in the practice. A man of his humane character would be the last in the world to do so. He did not come there to defend the operation, but to say that the Bench had no right to fine his client under the Act, as he did not know the act was cruel, and he did not perform it wilfully.

Mr. Ennis argued that they could not fix the charge of cruelty on his client, and they could not convict where two such

eminent gentlemen as Professor Spooner and Professor Ferguson differed.

Professor Spooner said he did not wish it to be understood that he wished to disparage Professor Ferguson, whose evidence he had not read particularly.

The magistrates then retired, and, having deliberated for some time, returned into Court.

The Chairman said they were of opinion in this case that Mr. Kennedy had made himself liable to a fine, which they had fixed at £2 2*s.*, in order to enable him to appeal.

Mr. Clay applied for costs. £10 would not defray the expenses of the prosecution. They had expended about £20.

Mr. Kennedy said he had been at a loss of about £30.

The Court ultimately ordered the defendant to pay £2 2*s.* fine and £1 costs on the case just heard, and 1*s.* fine and 1*s.* costs on each of the other nineteen cases.

Mr. Brady said it was the London Society which had sent over Professor Spooner, so great an interest did they take in the matter.

The two men named Markey and Murphy respectively, who had performed the operation of cutting off the horns of the animals above referred to, were then fined 1*s.*, and 1*s.* costs each, for each animal operated upon.

The Court then rose.

EXCHEQUER COURT.

Wednesday, May 31*st.*

(*Before* Mr. Baron Pigott and a Common Jury.)

Taylor *v.* Harmar.

This was an action brought to recover the sum of £19 on the warranty of a horse.

Mr. Karslake, Q.C., and Mr. T. Salter, were for the plaintiff. Mr. Hawkins, Q.C., and Mr. Wills, were for the defendant.

The short facts, as abridged from counsel's opening statement, were—the plaintiff was the owner of the Deep Carr Mills and Moorside Farm, a few miles from Sheffield. That, wanting a cart-horse, he sent his general managing man to a neighbouring fair, in January last, to purchase such an animal as he required. On arriving at the fair, Messrs. Dyson and Brier (the parties sent) saw the horse in question, the property of Mr. Harmar, who asked the sum of £40. Dyson examined the animal, and found a lump behind one of the ears, which he thought was the "poll evil." He inquired of Harmar about it, who assured him it was not so, and that he was ready to give a written warranty. Mr. Dyson effected the purchase for the plaintiff on the condition of £1 off. The horse was taken to the farm and in due course lightly worked, when it was found he hung his head, and gave all the signs of poll evil. A correspondence ensued between the parties; the defendant

declined receiving the animal back on the ground alleged, asserting there was no disease of the kind, and hence the present action for the difference, the plaintiff having sold the horse for £21.

Mr. Wm. Brier, sworn and examined, deposed he resided near Deep Carr, and was the manager of the Deep Carr Mills. That on the 25th of January was at a fair at Chesterfield, and saw a bay horse of Mr. Harmar's in the Market Place. Witness liked the horse, and asked Harmar whether he would warrant him sound. He said he would to him, but not to a dealer. The price was 40 guineas. Dyson examined the horse and said "there was a lump on the off side of the head." Harmar said he would warrant him sound, and he gave a written warranty and £1 off. They then had a glass or two, and witness went home by the railway, and the horse was taken to Deep Carrs. Got home that night, and the next morning saw the horse at the mills. Shortly after, the man in charge of him said he hung his head, and he did not like the appearance of the animal. Witness saw him in the yard; the horse was examined by Dyson, and there was a lump on the off side of the head. Called upon Mr. Turner, a veterinary surgeon of Sheffield, the following day, the 22nd of February, and it was pronounced to be the poll evil. Mr. Harmar came with another gentleman to look at the animal at Deep Carr.

Mr. Hawkins.—It may save some trouble if I mention the gentleman's name was Martin, and he is a veterinary surgeon.

Examination continued.—They said he might have hurt his head by the baulk in the stable, or been beaten over the head. The horse was ultimately sold, as they did not choose to apply iodine or other expensive and long remedies.

In cross-examination by Mr. Hawkins witness said—The plaintiff is an attorney. There was an offer made by Mr. Cutts to refer the whole matter to a veterinary surgeon. Mr. Taylor told him that was so.

Baron Pigott here inquired if the question was whether the horse had the poll evil.

Mr. Hawkins.—Yes; that is the question.

Baron Pigott.—I should have thought a veterinary surgeon as well able to decide the question as a jury or I.

Mr. Hawkins.—And I will leave it to any competent veterinary surgeon. The horse is here, and they may go and look at him.

Baron Pigott.—Have any of you gentlemen (to the jury) ever seen a horse with poll evil.

Several jurymen here said "No."

Baron Pigott.—And I never saw but one.

Mr. Karslake declined to accede to the proposition to refer, as he did not know what had been done to the animal since it was out of their power.

Cross-examination continued.—Did not know much about poll disease, except that it was an abscess that produced it. Did not examine him, as Mr. Harmar said he would warrant him sound. Left it to Mr. Dyson to examine him. The man in charge of him

said he would shy when he came near him. Harmar said he had probably been beaten about the head. The man denied he had ill-treated him. Applied his finger to the lump; it was a small lump, and the horse winced a little when he pressed it. Did not find any heat in it.

On re-examination nothing particular transpired, and the Court then adjourned until 10 o'clock the next morning.

Thursday, June 3rd.

George Dyson, examined by Mr. Salter, said he was a farmer, living at Thurgelay. On the 25th January he was at Chesterfield with Mr. Brier. While he was with Mr. Brier and Mr. Harmar in the yard of the Angel Inn, he saw a bay horse. He observed a lump on the top of his head, and called Mr. Brier's attention to it. Mr. Harmar said he would warrant the horse all right and sound; upon that Mr. Brier purchased the horse. Early in March he saw the horse at Moorside. The lump on the head still remained. It was about the same size as before.

Cross-examined by Mr. Wills.—On the 5th of March he did not look at the horse's mouth, and could not say whether it was sore. He had not said to the defendant when Mr. Brier was buying the horse, "Why, here is a lump!" He did not think much of it.

John Ray, examined by Mr. Karslake, Q.C.—Lived at Moorside, and was a farm servant. He fetched the horse from Deep Carr Mills to Moorside, and put him in a loose box at Moorside. The weather being stormy, the horse was not washed till a fortnight and a day after, when it was taken along with two others to Deep Carr Mills. He observed that the horse held his nose out and his head on one side going and coming back. When he returned home and was put into the loose box he did not eat very well. Since that the horse had been taken out, and had conducted himself in the same manner. The horse getting worse, Mr. Turner came and examined it, and gave instructions that the horse was not to be washed.

Cross-examined by Mr. Wills.—He had never struck the horse. When the horse was in the loose box he had no halter. The harness that was used had previously belonged to a larger horse.

Thomas Stevenson, a corn miller, living at Moorside, was present when Mr. Harmar and Mr. Martin examined the horse. They each took hold of the horse by an ear and examined the head. Mr. Martin gave Mr. Harmar a nudge, and they afterwards cross-examined Paddock, a man who was in the stable, with respect to the horse, in all shapes and forms.

Cross-examined by Mr. Wills.—He supplied Mr. Taylor with corn. He did not hear Paddock say that a man had struck the horse. Mr. Martin said several times, "Oh, he has been struck with a fork;" but the man said he did not know anything about it.

Septimus Edward Turner, examined by Mr. Karslake, said that he was a veterinary surgeon living at Sheffield. He had examined the horse upon the request of Mr. Brier at Deep Car Mills. He

found an enlargement on the off side of the head, the seat of the poll evil. The poll evil is an enlargement of the head. If a horse was washed while it had the poll evil, it would probably kill him. Subsequently he saw the horse again, when the horse presented the same symptoms; he also examined the stable, and he did not believe from the appearance the stable presented that the horse could have struck himself, and so caused the injury.

Cross-examined by Mr. Wills.—If a horse was washed while it had the poll evil, it would not be proper treatment. You can tell afterwards by examination whether a horse has had the poll evil or not.

Charles Taylor, a veterinary surgeon of Nottingham, examined by Mr. Karslake, confirmed the evidence of the previous witness, and also stated that poll evil was most frequently caused by external injury.

(*To be continued.*)

CAMELFORD.

At the special Petty Sessions on Friday, Elizabeth Yelland and her daughter were charged with stealing two faggots of wood from the plantation of John Carpenter Garnier, Esq., and were also charged with maliciously cutting off the tail of a sheep-dog, the property of Mr. G. Arnall, of Camelford. After cutting the tail off, they tied it around the dog's neck, and in that state sent it home. The both cases being proved, they were committed to gaol with hard labour for one week for the first offence, and the remainder of two months for the second.

COMMUNICATION FROM MR. G. ARNALL, M.R.C.V.S., CAMELFORD.

July 13th, 1865.

Dear Sirs,—Your report of the case, Wicket *v.* Williams, in the last month's *Veterinarian*, contains a slight error.

I did not, as there stated, examine the mare previous to sale, but merely drew the attention of a friend of mine, who was with me at the time, to the animal's eyes, which were diseased.

I am, truly yours.

To the Editors of 'The Veterinarian.'

PARLIAMENTARY INTELLIGENCE.

An Act of Parliament has been printed to render owners of dogs in England and Wales liable for injuries to cattle and sheep. An owner can be summoned before a magistrate where the damage shall not exceed £5. The occupier of a house or premises where any dog was kept, or permitted to live, or remain at the time of the injury, is to be deemed to be the owner of such dog, unless the occupier can prove that he was not the owner at the time the injury complained of was committed, and that such dog was kept or permitted to live or remain in the house or premises without his sanction or knowledge.

AT THE COUNCIL CHAMBER, WHITEHALL, THE 24TH DAY OF JULY, 1865. BY THE LORDS OF HER MAJESTY'S MOST HONORABLE PRIVY COUNCIL.

Present:—Lord President; Sir George Grey, Bart.; Mr. Milner Gibson.

Whereas by an Act passed in the session of the eleventh and twelfth years of Her present Majesty's reign, intituled "An Act to prevent until the 1st day of September, 1850, and to the end of the then next session of Parliament, the spreading of contagious or infectious disorders among sheep, cattle, and other animals," and which has since been from time to time continued by divers subsequent Acts, it is (amongst other things) enacted that it shall be lawful for the Lords and others of Her Majesty's Privy Council, or any two or more of them, from time to time to make such Orders and Regulations as to them may seem necessary for the purpose of prohibiting or regulating the removal to or from such parts or places as they may designate in such Order or Orders, of sheep, cattle, horses, swine, or other animals, or of meat, skins, hides, horns, hoofs, or other part of any animals, or of hay, straw, fodder, or other articles likely to propagate infection; and also for the purpose of purifying any yard, stable, outhouse, or other place, or any waggons, carts, carriages, or other vehicles; and also for the purpose of directing how any animals dying in a diseased state, or any animals, parts of animals, or other things seized under the provisions of this Act, are to be disposed of; and also for the purpose of causing notices to be given of the appearance of any disorder among sheep, cattle, or other animals, and to make any other Orders or Regulations for the purpose of giving effect to the provisions of the said Act, and again to revoke, alter, or vary any such Orders or Regulations; and that all provisions for any of the purposes aforesaid in any such Order or Orders contained shall have the like force and effect as if the same had been inserted in the said Act; and that all persons offending against the said Act shall for each and every offence forfeit and pay any sum not exceeding twenty pounds, or such smaller sum as the said Lords or others of Her Majesty's Privy Council may in any case by such Order direct:

And whereas a contagious or infectious disorder, of which the nature is at present uncertain, has lately appeared, and now prevails among cattle within the metropolis and in the neighbourhood thereof, and it is expedient to take measures for preventing such disorder from spreading:

Now, therefore, the Lords of Her Majesty's Privy Council do hereby, by virtue and in exercise of the powers given by the said recited Act, and by the several Acts continuing the same as aforesaid, order as follows :

1. If at the date of the publication of this Order in the *London Gazette* there shall be any cow, heifer, bull, bullock, or ox, labouring under any contagious or infectious disorder in the possession or custody of any cowkeeper, dairyman, or dairywoman, or of any milkman, or milkwoman, or vendor or purveyor of milk, or of any dealer in cattle whatsoever within the city of London or within the limits of the metropolitan police district, or if at any time hereafter, while this present Order shall continue in force and unrevoked, any cow, heifer, bull, bullock, or ox, being in the possession or custody of any such person as aforesaid within the said city of London or within the metropolitan police district, shall be seized or attacked with, or be found labouring or suffering under, any such contagious or infectious disorder, notice of the existence of such disorder, or of the first appearance of such disorder in or among the cattle belonging to or in the custody of any such person as aforesaid, shall immediately thereupon be given by the person in whose possession or custody such diseased animals or animal shall be, to the Clerk of Her Majesty's Most Honorable Privy Council in waiting at the office of Her Majesty's Privy Council at Whitehall, in the county of Middlesex; and it shall be lawful for the said Clerk of Her Majesty's Privy Council, and for all such persons as he shall by writing under his hand authorise in that behalf, thereupon, and at all reasonable times thereafter, to inspect and examine all or any such diseased animals or animal, and to report to the Lords of Her Majesty's Privy Council all such information and particulars as to the nature or character of such disorder as may seem to him expedient for the purpose of enabling proper regulations to be made for preventing or checking the further propagation and increase of such disorder.

2. Every person offending against this Order, and omitting to give such notice or to permit such inspection and examination as aforesaid, shall for every such offence forfeit any sum, not exceeding twenty pounds, which the Justices before whom he or she shall be convicted of such offence may think fit to impose.

(Signed) EDMUND HARRISON.

ARMY APPOINTMENT.

War Office, Pall Mall; *July 11th.*

Acting Veterinary Surgeon John Hanley to be Veterinary Surgeon, *vice* Francis Cotterell, deceased.

OBITUARY.

Died, on July 9th, after a long illness, Mr. John Betts, M.R.C.V.S., Docking, Norfolk. His diploma bears date May 26th, 1852.

In the Monthly Military Obituary for July, we find the name of John Lythe, half-pay, Royal Artillery Drivers. His diploma bears date, October 8th, 1805.

THE

VETERINARIAN.

VOL. XXXVIII. No. 453. SEPTEMBER, 1865. Fourth Series. No. 129.

Communications and Cases.

THE CATTLE PLAGUE.

After an interval of 120 years England has again been destined to witness the destruction of her cattle by a "grievous murrain." War and pestilence, as has been truly said, are among the greatest evils which can afflict a nation. The former of these we have been mercifully preserved from, but the latter has come upon us with a force which threatens to sweep away thousands of our cattle, and at no distant date to greatly diminish the supply of food for the people. A visitation like this may well move a nation to its centre, and none therefore can be surprised at the agitation which prevails in men's minds, and the vigorous efforts which are being put forth to stem the torrent of the evil. How the malady has been introduced may not yet be made out with all that exactness which is necessary to satisfy some controvertists. There are those who will not be convinced of the fact of its being an exotic, introduced into the country for a second time after the long interval alluded to, and who believe in its spontaneous origin among the cows in the London dairies. To these we would only say, that the whole history of the disease, and the laws which govern its extension stand opposed. The far distant Steppes of Russia

are the home of the pest. Here that law of prevention —sequestration—more powerful than all besides, cannot be brought into operation. The extent of the territory, the fewness of the inhabitants, the total absence of anything like science or skill, render nugatory the will of the Autocrat of all the Russias to rid the country of the evil. Surrounding nations often suffer from its extension, and hence periodically Poland, Gallicia, Podolia, Wallachia, and Moldavia in particular, are visited. Hungary and Austria, with Bohemia, Silesia, and Prussia, may be said to stand like a wall between the plague-stricken countries and the rest of Europe. It would be well if this barrier were never passed; but now and then, by the ordinary trade in cattle, it is broken through, and the disease spreads, until confronted by *cordon* after *cordon*, it yields to the means adopted for its extermination. In times gone by, the sword of the spoiler has inflicted this, among many other evils, upon Europe; but now we have seen the heralds of peace—trade and commerce—bringing the same calamity to our shores.

Not wishing to be alarmists, we did little more in our last number than announce the fact, that a fatal bovine disease had made its appearance, and that the attention of the government had been directed to it. The details of the outbreak, so far as it is even now necessary to allude to them, are simple and few. Towards the latter part of June the malady gained a footing in the London dairies, and has since spread with a rapidity which in some degree might seem to justify the idea of spontaneous origin, or atmospheric infection, in the minds of those who do not consider the extraordinary influence of the railway system in distributing cattle over the entire country. For the present, at least, the circumstances connected with its introduction into England must remain unnoticed. Facts are now all important; no time is left for speculation. Observation must not flag until every circumstance that can throw light on the nature, causes, and results of the disease has been thoroughly and impartially sifted. Science also has much to do, and both the chemist and the microscopist have yet to perform their parts; and when all has been done, and done well, we may hope to speak

more authoritatively on the subject. At present, however, the attitude of the profession should be that of observation.

In many parts of the country where the disease has not yet appeared, much anxiety is expressed by veterinary surgeons and others interested in the matter to obtain information upon the pathology of the malady, and its characteristic signs. Inquiries are daily reaching us from all quarters, and we have to regret that, in spite of a desire to afford all the information in our power, we have been compelled to intrude on the patience of those whom we should have been delighted to promptly assist, and on whose friendly feeling we have still to rely to exonerate us from the charge of intentional discourtesy. In very truth, the urgency of the case left us no alternative but to sacrifice private feeling at the altar of public weal.

In our present brief sketch we propose to offer a concise account of symptoms and *post-mortem* appearances, before passing on to notice the acts of the government and the suggestions adopted to prevent the spread of the malady, which will, we trust, satisfy the inquiries of many of our readers.

"Variations in the earliest indications of the disease are manifested, these depending somewhat on the severity of the attack, but more especially on the circumstance as to whether the digestive or the respiratory system is the chief focus of the malady.

"As soon as the affection declares itself, the animal ceases to take any kind of food, and in most cases even refuses water. Rumination is suspended; and the animal stands with its head hanging down and the ears drawn back. If made to move, it shows great prostration of strength, and frequently staggers as if about to fall. The skin is hot in places, and often remarkably so between the limbs, the hind ones in particular. An exudation frequently takes place from these parts, and is succeeded by cracks and sores. The hair is staring, especially along the upper part of the neck, shoulders, and back. The extremities are cold, even at the commencement of the disease; and in a latter stage the increased heat of the surface of the body gives place to a remarkable coldness, especially along the course of the spine.

"Tears early trickle from the eyes, which are red and expressive of suffering, and a watery discharge flows mostly from the nostrils. There is a continuous increase of these secretions, which become more or less purulent in the advanced stage of the malady. The mouth is hot, red, and 'furred,' often presenting here and there raw-looking spots, especially on the inner side of the upper lip and along the roof. The breath is fœtid. The respiration is increased, and generally accompanied with a moan in the advanced stages. A slight cough is also present in some cases. The pulse is quick and weak, and scarcely to be felt, excepting at the heart, even at the commencement of the disease.

"The bowels are frequently torpid at the outset, but diarrhœa, leading

to dysentery, mostly follows; the evacuations being slimy, liquid, and sometimes of a dirty yellow colour, or occasionally tinged with blood. The lining membrane of the vagina is generally remarkably red, and a viscid mucus not unfrequently hangs about the labia. Tenesmus is often present. Slight tremors of the muscles of the shoulders and thighs are to be observed in some cases, and so also is an emphysematous condition of the skin along the upper part of the back. In milch cows the secretion of milk is quickly arrested, a remarkable diminution in the quantity taking place as one of the earliest indications of the attack. As the disease advances towards a fatal termination the prostration of the vital powers becomes more marked, the breathing short, quick, and more painful, the alvine evacuations fœtid and more slimy, and the surface of the body deathly cold. The animal will sometimes sink as early as twelve hours from the commencement of the attack; but in many cases the disease will be protracted to the fifth or sixth, and occasionally to the eighth or ninth day.

"The period of incubation of the disease is found to vary, the majority of animals sickening on the tenth day after exposure to the infection, but some have been attacked on the seventh day."

It will be anticipated from the varied indications exhibited during the progress of the disease, that the *post-mortem* appearances will differ according to the part of the organism chiefly affected, and especially according to the time of duration of the malady. In many cases the roof of the mouth will be found covered with a dirty yellow exudation upon an ulcerated surface. Sometimes the lining of the pharynx is of a deep scarlet colour, but more frequently the mucous membrane of the larynx, trachea, and bronchial tubes, is injected and covered with a layer of exudation partaking of the characters of lymph and pus combined, and varying from the finest film to a quarter of an inch in substance. The lungs are often, but not always emphysematous, while congestion here and there exists. Old lesions resulting from previous disease must not be confounded with the changes wrought by the pest.

The heart is frequently flabby, and in the left ventricle large blood spots are generally present; these, however, are not to be looked upon as specialties of the disease. On opening the abdominal cavity the omentem is frequently observed to present patches of redness. The intestines are altered in colour, from the condition of the mucous membrane being partially seen through their walls, and often both the solitary and accumulated glands are so filled with secretion, that they project palpably from the surface. On cutting

into the rumen a quantity of undigested food is generally found, but besides an occasional tinge of redness, there is nothing of importance to be looked for here. The omasum affords in numerous cases every characteristic indication of the effects of the malady, its folds being inflamed in patches, or ulcerated, and even showing large perforations, with claret coloured edges, from death and sloughing of the textures. The structure of the liver is mostly unaffected, but the gall-bladder is remarkably full. The urinary organs suffer but little change.

The lining membrane of the abomasum is inflamed in nearly every case, and numerous points of ulceration will often be seen, especially affecting the openings of the follicles. The intestines show similar morbid changes, particularly in the jejunum and ilium, and also the cæcum, the last presenting, in many cases, a peculiar mottled appearance, from the accumulation in the follicles of a dirty white, or yellowish secretion.

Immediately on the appearance of the disease, the government took action, and issued an order in council, which has since been extended to the whole of England, Wales, and Scotland. It provided as follows:

Whereas by an Act passed in the session of the eleventh and twelfth years of Her present Majesty's reign, intituled "An Act to prevent until the 1st day of September, 1850, and to the end of the then next session of Parliament, the spreading of contagious or infectious disorders among sheep, cattle, and other animals," and which has since been from time to time continued by divers subsequent Acts, it is (amongst other things) enacted that it shall be lawful for the Lords and others of Her Majesty's Privy Council, or any two or more of them, from time to time, to make such Orders and Regulations as to them may seem necessary for the purpose of prohibiting or regulating the removal to or from such parts or places as they may designate in such Order or Orders of sheep, cattle, horses, swine, or other animals, or of meat, skins, hides, horns, hoofs, or other part of any animals, or of hay, straw, fodder, or other articles likely to propagate infection; and also for the purpose of purifying any yard, stable, outhouse, or other place, or any waggons, carts, carriages, or other vehicles; and also for the purpose of directing how any animals dying in a diseased state, or any animals, parts of animals, or other things seized under the provisions of this Act, are to be disposed of; and also for the purpose of causing notices to be given of the appearance of any disorder among sheep, cattle, or other animals, and to make any other Orders or Regulations for the purpose of giving effect to the provisions of the said Act, and again to revoke, alter, or vary any such Orders or Regulations; and that all provisions for any of the purposes aforesaid in any such Order or Orders contained shall have the like force and effect as if the same had been inserted in the said Act; and that

all persons offending against the said Act shall for each and every offence forfeit and pay any sum not exceeding twenty pounds, or such smaller sum as the said Lords or others of Her Majesty's Privy Council may in any case by such Order direct:

And whereas a contagious or infectious disorder has lately appeared, and now prevails among cattle within the Metropolis and in the neighbourhood thereof, of which disorder the nature was at the time of the making of the Order next hereinafter mentioned uncertain, but which has since been ascertained to be of a typhoid nature, and is generally designated as the "cattle plague," and may be recognised by the following symptoms:—

"Great depression of the vital powers, frequent shivering, staggering gait, cold extremities, quick and short breathing, drooping head, reddened eyes, with a discharge from them, and also from the nostrils, of a mucous nature, raw-looking places on the inner side of the lips and roof of the mouth, diarrhœa, or dysenteric purging:"

And whereas it was expedient to take measures for preventing such disorder from spreading:

And whereas, for such purpose, an Order was duly made, in pursuance of the authority of the said Acts, by the Lords of Her Majesty's Most Honourable Privy Council, dated July 24, 1865, applicable to the city of London and the Metropolitan Police District:

And whereas since the making of the said Order the said disorder has appeared in other parts of England, and it is expedient to extend the provisions of the said Order to the remaining parts of England and Wales, and to make further regulations for the purpose aforesaid for the last-mentioned parts of the United Kingdom:

Now, therefore, the Lords of Her Majesty's Privy Council do hereby, by virtue and in exercise of the powers given by the said recited Act, and by the several Acts continuing the same as aforesaid, order as follows:

1. That this Order shall extend to all the parts of England and Wales not comprised in the said recited Order.

2. That in this Order the word "animal" shall be interpreted to mean any cow, heifer, bull, bullock, ox, or calf.

3. If at the date of the publication of this Order in the *London Gazette* there shall be any animal labouring under any such disorder in the possession or custody of any cowkeeper, dairyman, or dairywoman, or of any milkman or milkwoman, or vender or purveyor of milk, or of any dealer in cattle, or farmer, or person in possession of cattle, whatsoever, within those parts of the United Kingdom to which this Order refers, or if at any time hereafter, while this present Order shall continue in force and unrevoked, any animal, being in the possession or custody of any such person as aforesaid within the last-mentioned parts of the United Kingdom, shall be seized or attacked with, or be found labouring or suffering under, any such disorder, notice of the existence of such disorder, or of the first appearance of such disorder in or among the animals belonging to, or in the custody of, any such person as aforesaid, shall immediately thereupon be given by the person in whose possession or custody such diseased animals or animal shall be, if such person shall reside within any corporate town, to the mayor or other principal officer of the corporation, or, if elsewhere, to the clerk of the justices acting in and for the petty sessional division of the county, or district in the nature of a county, in which he resides; and, upon receipt of such notice, or upon any other information which satisfies him or them that such disease has appeared within his or their jurisdiction respectively, it shall be lawful for such mayor or other principal officer, and for the said justices, if he or they shall think fit, from time to time to appoint some veterinary

surgeon, or other person duly qualified, to be an inspector, for the purpose of carrying into effect the following rules and regulations within the corporate town or petty sessional division for which he shall have been appointed, and the same authority may, from time to time, revoke such appointment.

4. Every such inspector shall have the power of entering upon and inspecting any premises in or upon which he has reason to believe that there is any animal labouring under such disease, from time to time, as often as he may think necessary.

5. Every person within any district for which an inspector shall have been appointed as aforesaid upon whose premises there shall be any animal labouring under such disorder, shall, as far as practicable, keep such animal separate and apart from all other animals; and no person shall, without the license of such inspector, send to market, or remove from his premises, any such animal, or any animal which has been in the same shed or stable, or has been herded, or been in contact, with any animal labouring under such disorder.

6. Every animal within any such district as aforesaid dying of such disorder, or slaughtered on account thereof, shall be buried, if practicable, on the premises where it has died, or been slaughtered, or (if this be not practicable) as near thereto as may be convenient; and if such animal be not buried with its skin, its skin shall be disinfected in such manner as the inspector of the district may direct.

7. Every person within any such district on whose premises there shall be any animal so labouring as aforesaid shall cleanse and disinfect such premises in such manner as the inspector of such district shall direct.

8. Every person offending against this Order shall for every such offence forfeit any sum not exceeding twenty pounds which the justices before whom he or she shall be convicted of such offence may think fit to impose.

(Signed) ARTHUR HELPS.

In addition to these regulations, various suggestions have also been circulated in order, as far as possible, to prevent the spread of the disease. In spite, however, of every care, numbers of diseased or infected animals are still being travelled about the country.

Veterinary surgeons in general, and inspectors in particular, are therefore required to promulgate, and as far as possible recommend, the following precautions to all owners of stock:

1. That all persons should abstain as much as possible from the purchase of "store stock" in fairs and markets, and should not purchase from cattle dealers without a warranty against the disease; and that all newly-purchased cattle, of every kind, be kept apart from others for a period of not less than twelve to fourteen days.

2. That cattle, the subjects of this disease, should not be allowed to remain in any meadow or pasture field, unless they can be perfectly isolated from all other animals, as well as kept at a distance of not less than a hundred yards from all roads along which cattle may be driven.

3. That in districts where there are unenclosed commons, on which cattle, the property of different owners, are pastured, no milch cows, or

other animals of the ox tribe, should be allowed to travel, day by day, to and from the common during the existence of the cattle plague in the neighbourhood; and that in the event of the disease prevailing on adjacent farms, or places contiguous to the common, the cattle pasturing thereon should be removed, as soon as possible, to the premises of their respective owners.

4. That every animal which is violently attacked with the disease be killed and buried without delay,* and that the skin be placed in some disinfecting fluid before being sent off the premises.

5. That no animals be allowed to go near to the burial places until several weeks have elapsed.

6. That no person who has the charge of the sick cattle be allowed to go near the healthy ones, and that all indirect communication by dogs, or other animals, between the infected and the healthy cattle, be strictly prevented.

7. That all healthy cattle, after removal from the diseased, be well washed and cleansed.

8. That no fodder or straw which has been used about infected cattle be taken to other animals, or even thrown into the fold-yard, or upon the manure heap, until it be first incorporated with chloride of lime, or some other disinfecting powder. When practicable it is desirable that all such fodder and straw should be burnt.

9. That all manure in the sheds or stables, occupied by diseased cattle, be daily sprinkled with some disinfectant, and that no evacuations of the diseased be removed without being first thoroughly disinfected.

10. That in all cases in which it is determined to slaughter animals which have been on a farm or premises where the disease has broken out, but which animals are believed at the time to be healthy and fit for human food, they be sent, with all due care and caution, direct to the nearest slaughter-house, if not killed on the premises, and as a further precaution their skins be placed in some disinfecting fluid.

11. That although experience has shown all animals of the ox tribe, whatever may be their age, sex, or condition, to be susceptible of the action of the infection, still it is very desirable that every cause which tends to weaken the constitution should be carefully avoided. Protection from inclement weather, supplying animals with nutritious food, such as cake or corn, and especially with pure water, are imperatively demanded at a juncture like the present.

A responsibility is resting on the veterinary profession greater than it has ever been called upon to bear. All must study the pathology of the disease, and the laws of its extension, and be familiar with the symptoms which mark its approach. The malady, as has been shown, must be quickly detected, and the pest-stricken animal isolated from the rest. An error here may be fatal to the lives of hundreds or even thousands. Nor will the duties of the profession end here. Diseases of various kinds will, by the uninitiated, be confounded with the plague, and utterly erroneous conclusions

* In town dairies, the animals to be sent to the knacker, or manure-manufacturer—if there be no convenience for burying them.

arrived at. To meet this, descriptions of the symptoms of the disease should be sown broadcast throughout the length and breadth of the land. Not only the farmer, the cattle dealer, and the dairyman must be guardians over their own property, but each must keep a strict watch upon the health of the stock of his neighbour. All such persons, as well as the veterinary surgeon himself, should be able to detect the presence of the insidious foe, and boldly meet the attack.

ADDITIONAL LEGISLATIVE MEASURES FOR THE SUPPRESSION OF THE CATTLE PLAGUE.

Since the preceding observations were sent to press, two additional Orders in Council have been issued. The first, bearing date August 25th, 1865, decrees—

That after the date of the publication of this Order in the London Gazette, it shall not be lawful for any person to remove any cattle from any port or place within that part of the United Kingdom called Great Britain, to any port or place within that part of the United Kingdom called Ireland.

And the Lords of Her Majesty's Treasury are to give such directions herein as may be necessary to ensure due obedience to this Order.

The second Order, which is dated the 26th day of August, 1865, after setting forth the Order shall extend to all parts of Great Britain, and that "the word 'animal' shall be interpreted to mean any cow, heifer, bull, bullock, ox, or calf," enacts—

3. That whenever the Mayor or other principal officer of any Corporation, or the Justices acting in and for the petty sessional division of any county, or district in the nature of a county, within England or Wales, and the Provost or other principal magistrate of any burgh or town, or the Justices of any county within Scotland, shall have reason to apprehend the approach of the said disease to the district over which his or their jurisdiction extends, it shall be lawful for such Mayor or other principal officer, and for such Justices in England or Wales, and for such Provost or other principal officer, and for such Justices in Scotland, if he or they shall think fit, from time to time to appoint one or more Veterinary Surgeon or Surgeons, or other person or persons duly qualified, to be an Inspector or Inspectors, for the purpose of carrying into effect within the district for which he or they shall have been appointed, the rules and regulations made by the said recited Orders and by this Order. And the same authority may from time to time revoke such appointment.

4. The powers of every Inspector appointed under any of the said recited Orders or this Order, shall extend to any fair or market held within his

district, and to every other place within such district, in which animals, as defined in this Order, may be found.

5. Every such Inspector shall have power within his district to order and direct that any animal which he suspects to be labouring under such disease shall be kept separate and apart from every other animal which appears to be free from such disease. And every person having the charge of any animals shall obey every such order or direction given by any such Inspector.

6. Every such inspector shall have power within his district to seize and slaughter, or cause to be slaughtered, and to cause to be buried in any convenient place, any animal labouring under such disease.

7. Every such Inspector shall have power within his district to cause to be disinfected, or, if necessary, destroyed, any fodder or manure which he deems likely to propagate the said disease; and every person within such district, upon whose premises any such fodder or manure shall be found, shall obey any order or direction given by such Inspector for that purpose.

8. That it shall not be lawful to send or bring to any fair or market, or to send or carry by any railway, or by any ship or vessel coastwise, or to place upon, or to drive along, any highway or the sides thereof, any animal labouring under such disease.

9. Every person offending against this Order shall for every such offence forfeit any sum, not exceeding twenty pounds, which the Justices before whom he or she shall be convicted of such offence may think fit to impose.

A FEW THOUGHTS ON INFLUENZA IN HORSES.

By Professor Varnell, Royal Veterinary College.

(*Continued from* p. 485.)

Having briefly enumerated most of the symptoms observed in this affection during the three periods previously referred to, I will in the next place make a few general remarks in reference to the results I have observed in many instances to follow. In doing this I shall allude to some of the pathological conditions of those organs that are most seriously involved, and the functional interference such changes of structure produce.

There can be no doubt—at least in my mind there is none—that, indirectly, a poison gets into the blood from sources extern to the animal body. This may be either through the food the animal eats, the water he drinks, or the air he breathes; or, as I have before supposed, it may be generated in the system itself, not of necessity in the interior of the circulatory apparatus of the body, but in the tissues from the retained structural waste, the result of imperfect excretion; or, as I have likewise thought, it may be produced in the blood from products which, under other circumstances, would have been eliminated. From this material new compounds

may have been formed, which act as a ferment, and soon contaminate the whole of the circulating medium.

By whichever of these modes the blood becomes vitiated, we have evidence of its being unfit for the nutrition of the body, and the normal support of the functions essential to the various purposes in the animal economy. This idea is verified by the symptoms during the progress of the disease, and also by the appearances of the body after death.

If healthy function depends upon a due supply of pure blood to each organ, we are forced to the conclusion that a deficiency or an excess of blood, or blood impure in quality, will interfere with normal function; and, this being the case, in forming a theory, we have to take into consideration the *quantity* of the blood that may accumulate in any important organ through defective circulation, and also its quality, as supplying the system at large. The latter condition of this fluid, often, in my opinion, determines the former phenomenon. I have heard people say, when some epizootic is affecting their horses or other animals, "You should do this or that, and you would prevent their being attacked with the disease." This advice is given as though the health of the animals was influenced by causes, the nature of which the chemist could easily determine, and at the same time suggest some means to render them innocuous; or if taken into the system, supply an antidote to render them harmless. But this is not the case. Who can tell, with any degree of certainty, what is the necessary meteorological condition of the atmosphere, or what the animal or vegetable poison wafted by the air in this or that direction; or the exact influence it may have upon the animals that have to breathe it, or it may come in contact with? Science has not yet reached to that state of perfection which will enable its votaries to say very much on these points wherever disease exists, nor to look far into the future and predict what is to take place in this respect. Much, however, may be done to prevent pestilential causes occurring, and also, should they exist, in fortifying an animal against their effects. Healthy localities should be selected, the buildings well drained and ventilated, both idleness and overwork forbidden, exposures to damp and cold avoided, and a fair supply of good nutritious food allowed. Such a course of procedure with reference to animals, will generally tend not only very much to render them unsusceptible to ordinary unhealthy influences, but will further assist in preventing the surrounding atmosphere being contaminated by decomposing animal and vegetable matters in the form of exhalations, which, when added to something that we think is of a specific

nature, tends in a still greater degree to produce that peculiar form of disease which we designate *influenza*.

Animals that are constitutionally defective, if allowed to become debilitated from want of proper food and care, are very likely when attacked to fall victims to this disease. There is an old and very trite saying, "The weakest always go to the wall." Weakly animals, if not in a greater degree more susceptible to contract disease, are certainly less able to bear up against its effects.

That the blood is in an abnormal state in diseases of this class is a conclusion very easily arrived at, as impaired function and altered secretion warrant this opinion. For the nerve centres properly to perform their office, they must be supplied with pure blood, and also in sufficient quantity, neither more nor less. Any deviation from this rule, either as to quality or quantity, soon becomes apparent both in the mental and physical operations of the body, as is often witnessed in this disease. The lower animals, although they do not possess the power of speech wherewith to convey to us the nature and seat of their mental or physical sufferings, nevertheless exhibit symptoms which are so easily interpreted as to leave scarcely any room for mistake to be made, especially in the disease under consideration. For example: the half comatose state in which the patient is often found, the peculiar way he wanders round his box; or if not doing this, he is observed forcing his head against the wall, or resting it on the manger, and breathing sonorously, are symptoms, which, although not always present to the same degree, can only be dependent upon mental derangement. So also with reference to the organs of locomotion; the staggering gait, from apparently half paralysed muscles, suggests the idea of functional derangement of the medulla oblongata and spinal cord. As it respects the sympathetic system of nerves, the ganglia, or centres of which are supposed to receive impressions, to generate and transmit force in the same way as those of the cerebro-spinal system of nerves, and this being the case, it is equally necessary that the due performance of this function should be perfect, or that of the organs they are believed to govern would become deranged, which in horses labouring under influenza, we find to be the case in a very marked degree. These phenomena, when fully considered, are as sure proofs of the impurity of the blood, as though it had been submitted to a chemical analysis; and perhaps even more so, for some of its constituents may be of that nature, resulting from new compounds generated within the blood-vessels, or taken in from without, that the chemist would fail to detect

them, yet they are capable of producing effects which the pathologist would at once recognise. As I have before stated, we find that a low form of fever, attended with great and rapid prostration of strength, is almost universally present in this affection.

But what are very important, and which we shall now proceed to consider, are its complications. The following are some of the most significant:—In most cases the liver appears to be functionally deranged. By some persons it is thought to be primarily so. That it very soon becomes implicated there cannot be a doubt. The peculiar condition of the visible mucous membranes, the colour and consistency of the fæces, and the colour also of the urine, are strong evidences that such is the case. In decided hepatic complications, the mucous membrane is of a dirty yellowish-red aspect; the urine is high coloured, but scanty; the fæces will often be in a more fluid state than is natural, and they may also be offensive to the smell. Should the horse die under these circumstances, and a *post-mortem* examination be instituted, the liver will be found to be much enlarged, of a dark brown colour, very soft in consistence, and easily broken down with the finger; it may likewise be ruptured in places; but the effused blood may be retained by the capsule, which will not have yielded. I have, in some instances, found the liver pale in colour, but very soft and easily ruptured by pressure. But when this is the case, it is usual to find the spleen and the mucous coat of the intestines likewise involved. When the liver was especially affected, I observed symptoms that were not present in other instances, and these cases occurred more especially about November, and only occasionally at other times. The horse would be observed to be dull and refuse his food, but nothing further was noticed until about twelve hours had elapsed, when he would have a decided fit of rigors, the breathing becoming quickened, the hair looking rough, harsh and dry, and the pulse accelerated, and hardly to be felt. This fit lasted from ten to twenty minutes, when it was followed by profuse perspiration, the pulse becoming fuller, and the breathing more tranquil. Some of these symptoms I have previously described at page 483.

The above symptoms may return again in from six to twelve hours, but when the rigors subside the horse will be found feverish and decidedly ill. Should perspiration not supervene upon the rigors, the feverish state that follows is much more intense, and congestion of the lungs is very likely to take place. In these instances I have no doubt but the

spleen becomes engorged with blood very early, and *may not* regain its normal condition. In fatal cases, this supposition is supported by the state in which the organ is often found on a *post-mortem* examination. It has been sometimes known to weigh from fifteen to fifty pounds, and occasionally is so soft that its structure gives way upon the slightest pressure. Large coagula of blood are frequently met with in the substance of this organ, from its vessels having been ruptured, but the effused blood is generally retained in consequence of the capsule and peritoneal covering not having given way. The alimentary canal is always more or less involved in influenza, and in some instances so much so that a cure, I may venture to say, is impossible. In ordinary cases disease of its mucous membrane is indicated, in the early stages, by constipation of the bowels, and a peculiar dry state of the dung pellets, which, however, in a very short time, as before stated, are found to be glazed on their surfaces, and partially covered with shreds of muco-lymph. This suggests the condition of the blood-vessels, and warns us of the danger of administering drastic agents. When the disease assumes a more serious character, the fæces become much softer, of a darker colour, and, in a few hours, actual diarrhœa sets in, which may soon merge into dysentery. The evacuations now should be carefully noticed and the symptoms generally well considered. The pulse is small, very quick, perhaps beating 100 in the minute, and so feeble that the slightest pressure upon the artery seems to extinguish it. The legs and skin are cold, the countenance haggard, the membrane lining the mouth purple in colour, except at the dorsum of the tongue, which may be of darkish brown, and the smell from the mouth is offensive. The horse will wander round his box, often exhibits abdominal pain, and sometimes tympanitis is present; the urine is scanty and highly coloured, and the alvine evacuations are offensive, and often streaked with fluid blood. Coupled with these very unfavorable symptoms, the horse refuses every kind of food; and although he frequently puts his mouth into the pail of water, he drinks but little. Our prognosis under these circumstances would be very unfavorable; indeed, death is almost sure to be the result.

These phenomena may, I think, be traced, step by step, to a vitiated state of the blood, early causing firstly, a partial or total cessation of the generation of nerve-force, and withdrawing, as a consequence, the controlling power of the coats of the blood-vessels, to which is due their relaxed condition, followed by partial or complete stagnation of their contents,

and the exudation of serum into the interior of the bowels, producing thereby extreme fluidity of the fæcal matter, the actual rupture of some of their coats, with the escape of blood, and the dysentery we have alluded to as a consequence. The *post-mortem* examination verifies these statements. I have observed, and also recorded, instances in which the walls of the intestines were enormously thickened from effusion into the connecting areolar tissue, and the inner coat actually blackened from congestion of its vessels. In some cases the meso-colon and mesentery were found much thickened, and in places blackened from interstitial deposit of blood; as were also the mesenteric lymphatic glands. This chain of evidence is very strong in favour of the theory advanced as to the primary cause of this disease.

I will now proceed to mention derangements of other organs. The function of the kidneys is always more or less interfered with, this being indicated by the variations in the quantity, and also the quality of the urine voided during the different stages of the disease. At the commencement of an attack of influenza the secretion is scanty, and in a short time it becomes high coloured, and gradually gets darker in colour and more copious as the fever declines. After which, if the horse progresses favorably, it resumes its natural character. Such are the changes in the quantity and colour of the urine in ordinary cases; but in those of a graver character it often contains elements not belonging to normal urine, as, for instance, a variable amount of albumen, which will account for the animal losing flesh so rapidly. I suspected this to be the case, but was not positive of it until I was made acquainted with the fact by Professor Tuson, who, while analysing some urine from a horse labouring under influenza, detected it in comparatively large quantities. In this instance, however, the horse recovered his health, and the albumen ceased to be an abnormal constituent of his urine. In those cases in which the animals have died, and the urine continued to be darker in colour up to the period of death, I have found the kidneys to be unnaturally large, dark in colour, structurally soft, and easily broken down by pressure; their cortical parts almost black, and the tubular portions much darker in colour than natural; their pelves and ureters also contained a dark sero-sanguineous fluid, and the contents of the bladder were of the same character; or, if anything, still darker in colour. In attacks of influenza that terminated fatally, especially when the bowels were very much involved, ascites was by no means uncommon. In some instances a large quantity of sero-sanguineous fluid was found in the peritoneal sac, but it

seemed to be of such an *aplastic* character that I have rarely met with any shreds of lymph adhering to the surface of this membrane, or floating in the liquid it contained.

I will next notice some of the thoracic complications, alluding, in the first place, to the heart. In all cases of influenza this organ is so much deranged in function, and in some instances to so great an extent, that it cannot possibly have escaped the notice of any one who has taken the trouble to examine its action. I have found its variations in this class of diseases to be so great, that I cannot resist making a few comments upon the phenomenon. One of the most important considerations in the treatment of this malady is to maintain, if possible, a free circulation of the blood. A feeble action of the heart tends to congestion of the blood-vessels, and effusion through their coats; the spoliation thereby of organs essential to life, and, as a consequence, most probably the death of the animal. For the heart to perform its office normally, it requires to be supplied with a due amount of nerve force; its rythms then will be firm and strong, and its beats as regular as the ticks of a clock; but should this supply be deficient and irregular, as we may expect it will be when the nerve centres, its source, are half paralysed by being furnished with impure blood, then we may expect that the action of the heart will be, as I believe it usually is, feeble in tone, quick, fluttering, and often intermittent, and the impulse to the wave of blood in the arteries so feeble that the pulse is extinguished by the slightest pressure of the finger. The heart, under such circumstances, may be compared to a man that is swimming. While he is strong and vigorous, his strokes are regular and true, but should he become exhausted, and in danger of being drowned, they become quick, irregular, and feeble. Such being the case in these, in one sense at least, parallel cases, would it be consistent, if we are desirous of saving either the drowning man or the sick horse, to pour into their mouths or withdraw from their body that which by so doing would tend further to paralyse the already flagging muscular energy? To save the man from being drowned, he must, by muscular exertion, keep his head above water, so that he can breathe atmospheric air; and to save the horse from dying, the heart must send the blood through the lungs, so that it may come in contact with air, to be re-oxygenated and get rid of its carbonic acid gas. If we are desirous of rendering assistance, we should surely not give depressants to either the man or the horse, but rather diffusible stimulants, with a view, as far as possible, to arouse the nerve force, and increase thereby mus-

cular energy, until in the one instance the man has reached the shore, and, in the other, the heart of the horse has kept the blood in circulation, so that the morbid material it contained is wholly eliminated from the system. These views, I think, suggest a mode of treatment which will be alluded to hereafter.

In fatal cases the *post-mortem* appearances of the heart and its membranes are, to a great extent, such as would account for the symptoms I have described. As a rule, the walls of this organ are pale, soft, and flabby, and patches of effused blood often exist beneath the endocardium, particularly under that of the left ventricle. The auricular-ventricular openings are often partially choked by coagula of blood, the more lymph-like portions of the clots being entangled in the chordæ-tendinæ. The semilunar valves, also, are often in a fixed position by fibrinous casts, which frequently extend into the aorta and the pulmonary artery and their divisions. These coagula are considered by some persons to be merely *post-mortem* occurrences, but in my opinion they are often partially formed previous to death. Spots of effused blood beneath the pericardium, although not so common as beneath the lining membrane of the cavities of the heart, are nevertheless by no means rare. They exist more particularly along the course of the auricular-ventricular and ventricular furrows than at other parts. Hydrops-pericardii generally is found in those animals that die; and I have no doubt in those cases also that survive, it exists to some extent; but the amount of effused fluid will vary very much, it never being very copious. I have likewise observed that it varies in colour; in some instances it is only a dark-straw colour, in others darker, and occasionally nearly black. When the latter was the case, the effusion of blood beneath the pericardium was generally considerable.

The respiratory mucous membrane and the substance of the lungs will next be considered. It is rare to meet with a case of influenza without finding the mucous membrane of the air-passages more or less affected. In some instances the substance of the lungs, also, is involved, and occasionally the pleural coverings.

In some cases the mucous membrane seems to be affected only as far as the nasal passages, the larynx, and the upper part of the trachea are concerned, which is indicated, as far as it can be seen during the life of the animal, by its vessels being unduly injected with blood, by the throat being sore, accompanied with a difficulty of swallowing and a cough; the latter being excited by a slight pressure

imparted to the region of larynx, or by a little exertion only. In some few instances the submaxillary, lymphatic, and the salivary glands, become enlarged, and abscesses have formed in them or in their vicinity. But the rapidity with which they have been developed has varied much. In those instances where there was much constitutional weakness, the suppurative process has generally been very tardy. When the mucous membrane of the trachea and bronchia is the principal seat of capillary congestion, there is always great prostration of the vital powers; the breathing becomes quick, perhaps thirty respirations in the minute; the pulse beating as much as ninety in the minute; the visible mucous membrane is of a dark red colour, and often in the latter stages of almost a purple hue; the discharge from the nostrils, which may be but slight at first, is increased in quantity, and may contain streaks of blood, and in the later stages it often assumes a rusty brown aspect.

The horse is now more dejected, he loses strength fast, the pulse is quicker and more feeble, and auscultation tells us that the bronchial respiration is far from normal; which, when we consider the nature of the discharge from the nostrils, associated with the previous symptoms, there is but little difficulty in understanding the nature of these sounds, or in attaching a due importance to the cause that gives rise to them. This form of disease of the respiratory mucous membrane is often, to my mind, wrongly termed bronchitis; and, considering its asthenic nature, which is an important point in determining its treatment, is, I think, calculated to lead to wrong conclusions in reference to the course to be adopted. Associated with the congestion of the capillaries of this membrane, it sometimes occurs that we have active congestion of the pulmonary capillaries also, and which is so rapid in its progress that death takes place in a few hours. These attacks are no doubt preceded by premonitory symptoms, but are likely to be unobserved, or, if they are noticed, would not be appreciated by those in charge of the animal. To understand the nature and importance of such acute attacks, the anatomy and physiology of the lungs must be pretty well understood; and the remedies, to be of any avail, must be promptly applied. Unfortunately, in cases that assume this fatal character the veterinary surgeon is usually called in too late. Nevertheless, contrary to the conclusions he may have arrived at, he is induced to do something. He does not attempt to bleed, as formerly, but he will possibly apply irritants to the sides of the poor animal; they will, however, have no effect; he may also give diffusible stimu-

lants, but they produce no reaction in the circulation; he likewise stimulates the extremities, but they nevertheless remain cold, and, despite all he does, the animal gradually sinks and dies.

(*To be continued.*)

BOTANY AS APPLIED TO VETERINARY SCIENCE.

By W. Watson, M.R.C.V.S., Rugby.

(*Continued from* p. 428.)

Belonging to the natural order *Umbelliferæ*, and closely allied to the plant last under consideration, viz., the *Conium maculatum*, are several plants possessing very powerful properties; and although we have at the present no detailed account of their poisonous influence upon animals, their very general distribution may, at any time, render their injurious effects liable to be brought under our notice. It will be sufficient to give a brief outline of the botanical and other characters of two of those most generally met with, viz., the *Cicuta virosa* (*Water hemlock* or *Cowbane*) and the *Œnanthe crocata* (*Water dropwort*).

Cicuta virosa (*Water hemlock* or *Cowbane*).—"*Stem* three to four feet high, hollow, branched. *Leaves* biternate, the radical ones pinnate; *leaflets* lanceolate, serrate. *Umbels* pedunculate. *Calyx-teeth* leafy. *Petals* obcordate. *Fruit* of two almost globose lobes or *carpels*, with five broad flattened ribs, and evident single *vittæ* between them. *Root* with slender fibres."—*Hooker and Arnott.*

The name "*Cicuta* was a term given by the Latins to those spaces between the joints of a reed of which their pipes were made; and the stem of this plant is equally formed of hollow internodes;" *virosa* from the Latin word *virus*, poison.

This indigenous perennial plant is found growing in wet ditches, ponds, and other damp situations in many parts of the country. Its smooth, striated, somewhat pinkish-coloured stem attains a height of from three to four feet, and its flowers, which are of a greenish-white colour, appear in July and August. All parts of the plant possess active properties; but the root appears to contain the most, especially when gathered in the spring and autumn of the year. It is thick, short, and hollow, and beset at the joints with numerous slender fibres, possessing a strong smell and somewhat acrid

taste. Numerous instances are recorded of the poisonous effects of this plant on the human subject, amongst others several cases from the root having been mistaken for the parsnip. The symptoms of its poisonous action, according to Dr. Taylor, are "giddiness, dimness of sight, headache, and difficulty of breathing." Somewhat conflicting opinions have been entertained respecting its poisonous effects on animals. The following remarks, from different writers, will give a general view of this;—"The plant, in the latter part of the season of growth, has a very strong and fetid odour; but in the spring, before this is developed, cows not unfrequently eat it with the water-grasses, to which they are so partial. It acts most fatally upon them; but horses, hogs, and goats, browse upon it with impunity." Another speaks of it as a "strong poison, which has been the means of destroying a great number of cattle." Its injurious effects to cattle were first pointed out by Linnæus, who, when he visited Tornea, "found the inhabitants complaining of a disease which destroyed many of their cattle, and especially if during the spring they were turned into a particular meadow in the neighbourhood. He soon traced the disorder to the water hemlock, which grew plentifully in that place, and which the cattle in spring did not know how to avoid." As grown in some parts of Scotland, it is said not to possess poisonous properties at all. Whatever influence soil and situation may have upon the condition of this plant, there is little doubt but that, as found growing wild in England, it is poisonous to cattle, and that the few accidents on record are more attributable to the natural dislike on the part of the animal to the odour and taste of the plant than the absence of its powerfully poisonous properties."

Œnanthe crocata (*Water dropwort*).—"*Root* consisting of large fusiform sessile *knobs*. *Stem* three to five feet high. *Leaves* tri-quadripinnate; *leaflets* stalked, cuneate-ovate, or roundish cut and serrate, those of the upper leaves narrower. *Flowers* of the circumference on long stalks and sterile; those of the centre sessile or nearly so and fertile. *Calyx-teeth* lanceolate. *Petals* obcordate, with an inflected point, radiant. *Fruit* cylindrical-oblong, without a callous base. *Carpels* more or less corky, with five blunt, convex ribs, and single vittæ in the interstices."—*Hooker and Arnott.*

This plant derives its name from οινος, *wine*, and ανθος, a *flower*, alluding to the vinous smell of the blossoms; and crocata, crocus-like, in allusion to its yellow juice. It is found growing wild by the sides of the Thames and wet ditches and still streams in many parts of the country. It

grows from three to five feet high, and its flowers, which are in dense umbels, and of a pale-yellow colour, appear in July and August. The root, which consists of four or five fusiform knobs, somewhat resembles the parsnip, for which it has been mistaken. "A fetid and very poisonous juice flows from a puncture, wound, or fracture, of almost any part of the plant, but is particularly abundant and virulent from the root. The juice looks at first like milk, but afterwards assumes a saffron colour; and it contracts, inflames, and ulcerates any part of the human system on which it is allowed to operate." As a poisonous plant in connection with the human subject, according to Dr. Taylor, "it is considered to be one of the most virulent of English vegetable poisons." He also says that "Dr. Christison considers that this plant, as it grows in Scotland, is not poisonous; but there appears to be no doubt, from various recorded cases, that as it grows in England, Wales, and Ireland, it is endowed with highly noxious properties. The symptoms are insensibility, tetanus, delirium, and insanity." The root, as before observed, bears some resemblance, both in appearance and taste, to the parsnip, and its leaves to the celery; and several fatal accidents have been produced by this mistake. A most remarkable instance is recorded as having occurred at Woolwich:—"Some years back a number of convicts working upon the river bank near Woolwich found a quantity of this plant. Struck by the resemblance to the well-known vegetables above mentioned, seventeen of them ate it. Shortly afterwards nine of the men went into convulsions and became insensible; one died in five minutes, another in a quarter of an hour, a third in an hour, and a fourth in a few minutes later. Two more expired in the course of a few days. They appear to have partaken of both root and leaves." We have little recorded respecting its poisonous effect on animals, although there cannot be a doubt but that a plant possessing such virulent properties would produce most serious effects upon them. One writer speaks of it as one of the most poisonous plants of England to both men and cattle; he also says that horses have been known to eat the roots and be killed by them. "A spoonful of the juice given to a dog rendered him sick and stupid."

There are several other varieties of water dropwort; but all possess, more or less, similar properties.

We shall again refer to the natural order *Umbelliferæ* when describing several valuable medicinal plants belonging to it.

(*To be continued.*)

OBSERVATIONS ON "SOUNDNESS."

By R. H. Dyer, M.R.C.V.S., Torquay.

(*Continued from* p. 289.)

What is a *flat* foot?

How easy it is to put a question; but it is not so easy to answer it. In endeavouring to solve the question as to what constitutes a flat foot, it may be remarked, in passing, that there are many degrees of flatness, and also a similar number of those feet which are designated concave.

Before a settlement of such an important question takes place, many opinions will have been expressed as to what may be defined to be a flat foot. It is difficult, if not impossible, to state upon mathematical calculation how concave the sole of a horse's foot should be. It has before been asserted that that foot which appears not to offend the eye, being neither flat nor concave, is the one which nearly approaches to perfection. The foot which is offensive to the visual organ is a very undefined mode of description, but it must be admitted, at the same time, that it may serve the purpose of directing one's thoughts to the foot more particularly. A foot may with truth be said to be flat, if the frog, bars, and heels are *not well developed*. Should these imperfections be apparent, there will be *in*sufficient space for a well seated shoe to be nailed to that foot; because it is always found in these kind of feet that only a small quantity of horn is present, by way of crust or wall, to nail to: the one invariably accompanies the other, added to which, the sole is almost always thin. To a flat foot there are many objections; first, it must, of necessity, come more into contact with loose stones and eminences found in travelling than a foot which is more concave. Secondly, the farrier has not the same good guide in presenting the nails. It has been demonstrated scores of times that a flat foot is oftener injured in shoeing than a concave one. The greatest error made in fixing a shoe to a flat foot is, that of placing the nails *too near* the sensitive parts; not actually pricking the foot, but causing constant pressure upon those parts which, in the course of time, renders an animal unpleasant to ride, and, in many instances, lame. When the veterinary surgeon is called to a case of lameness (who has not the advantage of the possession of a forge), the animal is taken to the farrier who shod him, or, perhaps, he (the farrier) has already examined the

lame limb, and *cannot find anything in the foot to cause lameness,* and he says there is nothing in the foot. This assertion is usually accepted as sufficient by the owner of the animal, and, in all probability, by some veterinarians also. I am fully aware of the opposition many veterinarians have to a forge; offering as their reason that the possession of a forge is degrading to the profession, and so on; and, moreover, that it is quite *un*necessary for a member of the profession to attach himself to a forge. At the present moment I cannot see my way clear without this appendage. It is true I have had some fifteeen or more years' assistance in this way, and have always had reason to believe that the forge was *indispensable.* This remark refers more particularly to the sister isle; there, no "vet." dreams of establishing himself without his "smithy." As far as I have been able to judge of the expediency of a forge *here,* it must be confessed, that some person should endeavour to set up an establishment of the kind, even if it were as a *prevention of cruelty to animals only.* The public have for a long space of time been subject to the grossest malpractice in the shoeing forges in the neighbourhood of which I am writing, and it is high time that some change should take place in order to protect the property of the public, and also to lessen the pain and torture to which many animals are subjected. Experience has taught me the absolute necessity for taking the steps alluded to. Doubtless, it will be admitted by many provincial "vets." that they are subject to many annoyances in reference to the working of these appendages to practice; still, if it can be shown there are any advantages attainable, these several annoyances must be overcome in some way, and the public protected. It has been said by some of my friends, they have *tried* forges, and abandoned them, after a trial of several years. When I am convinced that I can conduct my practice without a forge, I shall only be too happy to wipe it, and all belonging to it, out of my memory. Until that time arrives, I must content myself with all the "sours" in connection with it.

But to return to the consideration of flat feet. Suppose a horse is presented for examination, and it is believed that the front feet are flat (the hindmost ones are seldom found fault with), the examiner informs the seller, or, more probably, his client, the feet are flat, and he should consider the horse unsound. With what surprise the owner of the animal would hear these words. He would immediately turn round and state how long he had had the horse; how many miles a day he had ridden or driven him, and so on. He would be

almost inclined to believe the "vet." did not understand his business, after making such an assertion. Again, the examination is proceeded with, and at length the shoes are removed (which course is not adopted universally), and the farrier finds that not only is the sole flat, but thin likewise, and some two or more nails have been pressing upon the sensitive part of the foot, so that a very slight amount of pressure will produce violent pain. Is this foot to be considered a sound foot? I should say, no! Yet there are many examiners who will certify as to soundness even in such a case as this. It is asserted by some veterinary surgeons that we have *no right* to remove a shoe to ascertain the state of parts above. It is *impossible,* in *all* cases, to know the precise nature of the feet, especially when those feet are badly or indifferently shod; and this being accepted as a fact, it will warrant our having recourse to that measure. It may be argued, when called to a case of acute suffering, that we have no right to examine the rectum. There may be no actual necessity for doing so, but it cannot be doubted that much good arises from the practice in some instances. Should an injection be ordered, how is it possible to administer the same without first emptying the intestine? This latter act is performed more as one of precaution than necessity, and so it is in the removal of shoes. Some feet are so healthy in their appearance that we need not meddle with them; but, as a general rule, I have always caused the removal of the shoes when practicable.

Are we then to consider a flat and thin foot an unsound one? This is the question with which we started, and is repeated here. My reply to this question is simply as follows:—Give the animal a *fair* and *reasonable* trial upon the road, taking especial notice how he bears both the removal and knocking on of the shoes, and taking care also to have him trotted slowly in hand *after* the shoes have been replaced (a few yards upon a smooth surface may be tried *prior* to the shoes being placed again upon his feet, if any suspicion is attached to the case). If these trials are deemed satisfactory, a certificate of *practical* soundness may be given with impunity. It may not, perhaps, be necessary to caution the examiner not to *overdo* the galloping, as it is sometimes asserted that the horse is made lame by his being ridden *too* much upon the hard road.

(*To be continued.*)

SECONDARY ABSCESS IN THE LUNGS, ACCOMPANYING CARIES OF BONE.

By S. J. Wills, M.R.C.V.S., Blandford.

Not having met with any record of a similar case, I send you the following account of a secondary abscess in the lungs, accompanying caries of bone, which may perhaps be sufficiently interesting to the profession for insertion in the *Veterinarian*.

The subject was a valuable hunter, belonging to a lady in this neighbourhood. During the last hunting season the pressure of the side-saddle produced a slight swelling on the withers; and this occurred repeatedly, although the saddle was altered in every possible way. The groom always succeeded in reducing it by some simple lotions; but at length I was called in, as the swelling had again appeared and was larger than before. It proved to be a fistula, which I opened freely; and the horse being under the care of a good groom it soon got well.

About two or three months since I was again requested to attend the horse, as another swelling had made its appearance; and finding a small portion of the spinous process to be diseased, I removed the carious part. Subsequently the other side of the withers presented unmistakeable signs of another abscess, which I opened, and found that the bone was diseased an inch or more below the part first affected.

The horse was now brought to my infirmary, and I extirpated the bone below the diseased part, and anticipated all would have gone on well. But now came the perplexing part of the case. From the first day after the horse came to my stables, he refused his food, and rapidly lost flesh; before which he was in good condition, being fed highly, and also taking tonics. The groom had some time previously noticed that he was falling off a little in condition, but he put this down to the effects of the fistula. In about a week I observed an occasional cough present, accompanied by a discharge of fetid pus from the nostrils, indicating the existence of an abscess in some part of the respiratory organs. I was, however, unable to detect its locality. I exhibited stimulants and tonics, but the appetite was entirely gone; and although every obtainable kind of food was offered the animal, he ate scarcely anything.

At the end of another week my patient began to breathe

quickly; and the pulse, which had for some days been increasing in frequency, rose to 80. The next day these symptoms became much worse; the pulse rapidly rising, until in the evening it reached 110 beats in the minute. The animal was very dull, and disinclined to move, and the flanks now heaved painfully. I left him at night, satisfied that he could not live many hours. Nevertheless the case rather puzzled me, for on auscultating the chest I had not been able to detect sufficient changes to account for the urgency of the symptoms. The horse died about six o'clock the next morning; and on making a *post-mortem* examination, I found a large abscess deeply seated in the posterior part of the right lung This had burst some time previously into the cavity of the thorax, in which there was a quantity of pus; the pleura contiguous to the abscess was much inflamed; the pericardium was also involved and distended with a quantity of fluid. The other lung was not much affected. The bronchial tubes and the trachea contained a quantity of pus.

The difficulty of diagnosing the seat of the abscess probably arose from its discharging most of its contents into the cavity of the thorax, thereby not materially affecting the respiration, until some of the larger bronchii giving way, the pus gained free access to the air passages, where it could escape more freely than by an opening into the pleural sac, which would be in contact with the walls of the chest. The immediate cause of death appeared to be suffocation.

I am informed by a medical friend, that cases of secondary abscess in the lungs, after caries or necrosis of a bone, sometimes, though rarely, occur in the human subject. Must not this have originated in the same manner? I should be glad to have your opinion.

[We believe that Mr. Wills is right in the conclusions to which he has come. A similar case is remembered.—Editors.]

Facts and Observations.

The late Donkey Show.—The donkey show at the Agricultural Hall, Islington, appears to have been a success. The prizes were given to the successful competitors by the Bishop of London, who, in his speech upon that occasion,

urged upon his hearers, consisting chiefly of costermongers, the necessity of kindly treatment being manifested towards the animals, and expressed his pleasure at seeing so many of the donkeys giving proof of this, and also the care that had been taken of them. Generally speaking, a man's own interests will cause him to be careful of that from which he derives a benefit, but in reference to the poor ass we fear the opposite often prevails. Bad passions are allowed to have the ascendancy, and the brute is made to suffer for that which is very often not his fault. Possibly a want of correct training is at the bottom of both. This seems now to be in a fair way of amendment.

Production of Ammonia from Air and Water, under the sole influence of the porosity of Arable Soil. By M. Decharme.—The author set himself to determine this question:—Is arable soil, under ordinary conditions, capable, simply by virtue of its porosity, and the influence of humidity, of transforming part of the atmospheric nitrogen which penetrates and traverses it, into ammonia or ammoniacal salts?

Direct experiments have shown this to be possible. By passing 200 litres of air (at the rate of 10 litres per hour) freed from its natural ammonia, over 250 grammes of ordinary vegetable earth, previously washed, or calcined and washed, or estimated relatively as to its total of nitrogen, then restored to its usual state of humidity, and raised progressively from the temperature of 10° to about 52°, M. Decharme found that part of the nitrogen of this air had been transformed into ammonia, into carbonate and nitrate of ammonia.

The total amount of ammonia thus produced by the catalytic force of the earth experimented upon was at an average of 0·139 gr., a small absolute quantity no doubt, but in reality considerable if we compare the atmospheric ammonia to that of rain water.

This result corroborates and completes the explanation of several facts of importance in a physiological and agricultural point of view—among others, the good effect of airy drainage and ploughing; the improvement of land by fallowing; the formation of nitrates in the soil; cultivation without manure; the presence of nitrogen in plants growing in an artificial soil, deprived of nitrogenized matters, removed from atmospheric air, and watered with pure water.

It also shows how all natural causes (winds, rains, changes of temperature and of pressure, &c.), or artificial causes (fal-

lowing, drainage, &c.), which determine the introduction and movement of air in the soil, favour the production of ammonia, and contribute to the development of vegetation; a view perfectly in accordance with the facts observed in practical agriculture.—*Les Mondes, and Chemical News.*

[The above theory is full of interest, for if such results are found to obtain in the laboratory of the chemist, what may not be anticipated in the great laboratory of nature, in which more operations are being carried on than our philosophy has yet dreamt of.—Eds.]

The Acetic Fermentation.—Acetic fermentation, says M. Pasteur, is always produced by the exclusive influence of an organism—the *mycoderma aceti*—one of the most simple vegetables, consisting essentially of frames of articulations slightly compressed towards the middle, measuring about $\frac{1}{5000}$th of a millimètre in diameter, and double that in length. However much charged with albuminoid matter, no alcoholic liquid has ever been known to give the appearance of acetification without the presence of this mycoderm. On the contrary, if a trace of the mycoderm is spread on the surface of an albuminoid liquid, alcoholic or slightly acid, it is immediately seen to develope, extend like a veil over the surface, and by a correlative action the atmospheric oxygen in contact with the liquid disappears and the alcohol acetifies. It is not essential for the liquid to contain albuminoid matters; provided the mycoderm finds there besides the alcohol a small quantity of alkaline and earthy phosphates, it will live and its action be the same as before; and this identity proves that the albuminoids which have been employed were merely nourishment for the ferment, and not the ferment itself.

Water Necessary for the Secretion of Milk.—M. Daucel has ascertained that the amount of water drank determines the quantity of milk that is given by an animal. He says that cows fed on dry food in houses give a fourth or even a third less milk than when at pasture. If fed on dry sesame cake they yield very little milk until supplied freely with water. A cow before calving will be satisfied with from 10 to 20 litres of water a day, but afterwards she will require 30, 40, or 50 litres.

THE VETERINARIAN, SEPTEMBER 1, 1865.

Ne quid falsi dicere audeat, ne quid veri non audeat.—Cicero.

THE PROPOSAL, BY PROFESSOR VARNELL, THAT LECTURES BE DELIVERED AT THE ROYAL COLLEGE OF VETERINARY SURGEONS.

We cannot think we are doing that which is wrong in offering some comments on a proposition incidentally alluded to by Professor Varnell in his reply to the toast, "The Royal College of Veterinary Surgeons," given at the dinner of the newly formed Veterinary Medical Association for the Western Counties of England; when he said, "he offered a suggestion at the last meeting of the Council which he thought would elevate the position of the profession. It was one that had emanated from, and worked beneficially in, the College of Surgeons, namely, that lectures should be delivered periodically by the members on general subjects; but no discussion was to ensue, as each would draw conclusions from what he heard."

We confess ourselves to be much pleased with it. We consider it is another step taken in the way of progress; another stone added to the temple of science, in the building of which, like that of the temple of old, the noise of the hammer of discord, nor the cutting axe of criticism, nor the enforcing tool of iron, should be heard. No controversy need be indulged in, but harmony, productive of mutual good. Some may in fearfulness say, It can't be done. We would, in the language of the poet, reply,

> "Leave 'Can't' for children; 'Try' 's the word for men.
> He prospers most in life who early learns
> This weighty lesson,—confident self-trust.
> Whole-willed, resourceful, from his early years,
> His masculine prompt nature still will wring,
> From out th' unlikeliest and most adverse things,
> The fairest, best results."

We venture to predict that if this proposition be honestly carried out, it will prove prominent among the most important changes that as yet have resulted from the spirit of

combination lately awakened in us as a body, therefore are we desirous of recording our sentiments respecting it, and to give it all support. For these lectures being delivered by men of standing in the profession they will embody the fruits of mature experience, with facts upon which reliance might be placed, and which will prove hereafter stand-points for reference. The subjects chosen need not be those that will call forth much contrariety of opinion, awakening controversy, but rather such as will prove conducive to the best interests of the body generally, containing principles rather than mere theories, which, although pleasing, are often more fanciful than useful. Not that we object to theory. Far from it. It often becomes the means by which science is built up and perfected; while it may be also said to lie at its base, since true theory is founded on inferences drawn from facts and established principles. What we really object to, is hypothesis, which is often nothing more than mere assumption.

It surely is wise to follow in the steps of those who have proved the path to be both profitable and safe. The labour of thought must have been called forth before any attempt was made to walk therein, thus we have the benefit of their experience, from which we derive a great advantage. Science should, there is no doubt, be cultivated for its own sake, but in this boastful, utilitarian age, we are more disposed to look to the profit ultimately to be gained from it, and how its principles can be practically applied. But how can they be applied if not known? Or how can their value be discovered but by their being tested? And how can the body generally be made acquainted with that which has been proved to be of practical worth so pleasantly as by friendly professional intercourse and intercommunication? Science brings its own reward in the end, although we may have long to wait for it. But we hardly know what may prove of real value on its discovery, since that which when first found out is often considered more curious than valuable. For instance, the discovery of the metallic bases of the alkalies and alkaline earths was not deemed of any moment, but they have since been applied in many ways, and their usefulness demonstrated. The like may yet obtain

with the newly developed metals cæsium, thallium, rubidium, iridium, and others.

"'Tis good to know,
But better to believe. The highest truths
Are often those that we the least can prove."

We are under no apprehension that any will charge us with presumption, or the manifesting of a desire to seem to be what we are not, or of boldly assuming to a position in the social and scientific scale to which we have no right. But were we to confess guilty to all this, we would say, aggression becomes here the law of conservation, for if we do not advance most assuredly we shall retrogress. We are not ignorant of the worth of the grace of humility, but there is such a thing as being trodden under foot, and of not availing ourselves of that to which we have a right. Let us then be up and doing, and not linger in the race. Means must be always used, since nothing is to be had without labour.

"The world is nothing but a mass of means;
We have but what we make, and every good
Is locked by Nature in a granite hand
Sheer labour must unclench."

Did space allow, we would still further dwell on the advantages that might be hoped to be derived from this proposal. We rejoice at much which has of late taken place; we like to see the old beaten track, worn into ruts, deviated from, and a new one chosen more in accordance with what is taking place around us. Nevertheless, we deprecate all rash and sudden changes, all abrupt measures. It is not by physical force the rosebud is unfolded, but by the genial influence of the sun and air and moisture. Let, therefore, each proposition, and its probable consequences, be deliberately weighed in the balance of judgment, and having received the approval of those most experienced, be at once adopted. Unquestionably the tide of progress has set in, and is irresistible. Those are wise who seize it at its flood. Science is a commonwealth, and each may and ought to contribute something to the general weal. Reticence militates against advancement, and reserve has its origin either in ignorance or selfishness. Knowledge, on the other hand, loves to communicate, and, like mercy, is twice blessed.

We entertain no fears from education, rightly considered, or the promulgation of truths the result of experience. They are land-marks to which the rising members would do well to take heed, and not let them be removed; guides to them in times of doubt; materials wherewith they themselves will have to build; "stones made ready before brought thither." Rather do we fear the consequences of ignorance and non-advancement, as this would carry us back to the dark days of farriery, from which, it may be said, we have only recently escaped, aided by the light of the torch of science. Let it be lifted still higher, and our watchword be ever—ONWARDS!

VETERINARY CONGRESS.

AT the Veterinary Congress which was held at Vienna, from the 21st to the 26th of August, the following gentlemen were present as deputies from England:

PROFESSOR SPOONER, representative of the Royal Veterinary College.

J. WILKINSON, Esq., P.V.S.A., representative of the Army.

W. ERNES, Esq., M.R.C.V.S., representative of the Government and the Royal Agricultural Society.

Professor Simonds was associated with Mr. Ernes in the commission, but could not leave England in consequence of the outbreak of the cattle plague.

Extracts from British and Foreign Journals.

REPORT OF EXPERIMENTS MADE UNDER DIRECTION OF THE LORDS OF THE COUNCIL AS TO THE VACCINATION OF SHEEP, AND AS TO THE INFLUENCE OF SUCH VACCINATION IN PREVENTING SHEEP-POX.

By JAMES F. MARSON, Esq., F.R.C.S., Resident Surgeon of the Smallpox Hospital, and

Professor SIMONDS, of the Royal Veterinary College.

(*Concluded from p.* 526.)

THE experience of all persons, both in England and on the Continent, agrees in bearing testimony to the fact that lambs suffer to a much less extent from inoculation than aged

sheep; that many of them scarcely show any constitutional disturbance, and that the mortality among them is seldom more than 1, or 1½ per cent., and indeed often *nil*.

Before concluding this report we deem it right, and chiefly as a matter of history, to state that there seems to be little doubt that the sheep-pox existed in this country in 1710 and 1711. In a work on 'Eruptive Fevers,' by Dr. Thomas Fuller, bearing date 1730, we find the following statement:

"There was, about the year 1710 or 1711, upon the South downs in Sussex, a certain fever raging epidemically among the sheep, which the shepherds called the small-pox; and truly, in most things, it nearly resembled it. It began with a burning heat and unquenchable thirst; it broke out in fiery pustules all the body over. These pustules maturated, and, if death happened not first, dryed up into scabs about the twelfth day.

"It could not be cured, no, nor in the least mitigated, by phlebotomy, drinks, or any medicines or methods they could invent or hear of.

"It was exceedingly contagious and mortal, for where it came it swept away almost whole flocks; but yet it could in nowise be accounted the same with our human smallpox, because it never infected mankind."

It remains only for us to state that, taking the whole subject of the vaccination and the inoculation of sheep into consideration, we have arrived at the following

Conclusions.

1st. That sheep-pox is not known to have existed in England but on three occasions, namely, in 1710-11, 1847-50, and 1862.

2nd. That sheep-pox is rightly considered as being always the result of infection, and its extension among sheep is governed by precisely the same laws as its prototype in man.

3rd. That the malady may be defined to be an infectious eruptive fever, which occurs, as a rule, but once in the same animal, without reference as to whether it arises naturally or is produced by inoculation.

4th. That the deaths from the natural disease often amount to 75, and are but seldom less than 25 per cent., while many of the animals whose lives are spared are left in a worthless condition.

5th. That the vaccination of sheep cannot be relied upon as a preventive or mitigant of sheep-pox, as the vaccine disease in these animals is but very imperfectly developed, even in the most successful cases.

6th. That even if the vaccination of sheep were protective, a serious drawback to its adoption would be that not more than 35 per cent. will probably be influenced by it on a first vaccination, and this under the most advantageous circumstances in the selection and command of lymph.

7th. That the vaccination of sheep on the principle of retro-vaccination has no value beyond an ordinary vaccination, nor does the plan materially increase the supply of lymph at command.

8th. That the inoculation of sheep with the virus of human smallpox is equally as inefficacious as vaccination.

9th. That the *ovination* of cows cannot be resorted to as a means to furnish lymph, these animals being insusceptible, as it would seem, to the action of sheep-pox virus.

10th. That the segregation of infected animals, although often of much value in arresting the progress of sheep-pox if immediately had recourse to, and perseveringly carried out day by day, is nevertheless almost impracticable when large flocks have to be dealt with.

11th. That the slaughtering and burying of the infected animals is justifiable only in the very earliest invasion of the flock, and in those cases in which the disease assumes a confluent character.

12th. That the only remaining conservative measure is inoculation, which, if rightly carried out, offers considerable advantages, for the following reasons:

a. That it gives security against a natural attack of sheep-pox.

b. That it limits the period of the existence of the disease in the flock.

c. That it mitigates the severity of the malady.

d. That it saves the lives of many animals which otherwise would be sacrificed, and produces comparatively but little loss of condition.

e. That it controls the extension of the disease, as one confluent natural case does more to diffuse the poison than probably fifty ordinary inoculated cases would do.

f. That the mortality of the inoculated disease, when compared with the natural, is on the average as 3 per cent. in the one case is to 50 per cent. in the other.

(Signed) James F. Marson, F.R.C.S.,
Surgeon to the Smallpox and Vaccination Hospital, London.
Jas. B. Simonds, M.R.C.V.S.,
Professor of Cattle Pathology to the Royal Veterinary College.

ALDERSHOT VETERINARY MEDICAL ASSOCIATION.

COMMUNICATED.

The Fourth Annual Meeting of the *Aldershot Veterinary Medical Association* was held at this station, on Thursday the 27th of July, 1865.

Staff Veterinary Surgeon Gardiner, *President*, in the Chair.

Present. — Veterinary Surgeon Collins, 1st Staff, 1st Royals; Veterinary Surgeon Owles, 1st Class General Staff; Veterinary Surgeon Rollins, 1st Class, R.H.A.; Veterinary Surgeon Callow, R.H.A.; Veterinary Surgeon Ross, 2nd Dragoon Guards; Artillery Veterinary Surgeon Healey, R.A., and Veterinary Surgeon Mayer, R.E.T., *Hon. Sec.*

The report stated that, during the twelve months terminating 30th June, 1865. three new members had joined the society, viz., Artillery Veterinary Surgeon Healey; Veterinary Surgeon Ross, and Veterinary Surgeon Grey, 1st Class, 8th Hussars.

That during the same period the following subjects had been brought forward for discussion:

Hepatitis; by Veterinary Surgeon Varley, 1st Class, 13th Hussars.

The Treatment of Open Joints by Metallic Suture; by Veterinary Surgeon Hall, 6th Carbineers.

The Treatment of Wounds; by Veterinary Surgeon Percivall, 11th Hussars.

The Absorption of Mercury after having been applied as a Local Dressing; by Artillery Veterinary Surgeon Healey, R.A.

Remarks on a Case of Diseased Pharynx simulating Bastard Strangles; by Veterinary Surgeon Ross, 2nd Dragoon Guards.

Pneumonia; by Veterinary Surgeon Death, 1st Class, Military Train.

To the Editors of the 'Veterinarian.'

THE YORKSHIRE VETERINARY MEDICAL SOCIETY.

OFFICIAL REPORT.

The Quarterly Meeting of this Society was held at the Swan Hotel, Harrogate, on Monday, 17th July, at 2.30 p.m.

There were present—The President, Mr. E. C. Dray, in the chair; Messrs. McTaggart, Cuthbert, and M. E. Naylor, Vice-Presidents; Messrs. Friend, Liverpool; T. Greaves, Manchester; Secker, Knaresboro; Secker, Ripon; Patterson, Dewsbury; Headley, Richmond; Freeman, Hull; Freeman, Keyingham; Horne,

Barnsley; Taylor, Wetherby; Broughton, Leeds; Bale, Otley; Pratt, Masham; Carter, Bradford; and the Secretary.

After the conclusion of the preliminary business, Mr. Friend was called upon by the President to state the question he came from Liverpool to advocate, viz., the formation of a Veterinary Protection Society.

Mr. Friend recommended the formation of such a society, combined with the various local associations, but distinct in their details, and that none but members of a Veterinary Medical Association should be eligible as members of the Veterinary Protection Society.

Messrs. Carter, Headley, Greaves, and the Secretary spoke in support of the movement, and it was ultimately arranged that a deputation from this society, consisting of the President (Mr. Dray), Mr. C. Secker, and the Secretary, should visit Manchester on the first Wednesday in September, to meet those from Manchester and Liverpool, and that the question should then be fully discussed, and the result laid before the three societies at their next quarterly meetings.

Mr. Greaves then read the subjoined essay on "Influenza."

A Paper upon "Influenza in the Horse," read before the Lancashire Veterinary Medical Association, in the Royal Institution, Manchester, also before the Yorkshire Veterinary Medical Society, held at Harrogate, by THOMAS GREAVES, M.R.C.V.S.

Mr. President and Gentlemen,—I have no desire to conceal the fact that I feel flattered in being permitted to be the first veterinary surgeon who has ever delivered an address upon Veterinary Science in this noble building. Indeed, the honour thus conferred upon me creates within me a degree of pride—which I hope is pardonable—when I see before me so large a body of enlightened, intelligent, and scientific men, who are my fellow-practitioners in this my native town.

It is at the express desire of our worthy President that I appear before you on this auspicious occasion, and however much it may be regretted that the task has not fallen to the lot of some other member who could have handled this most interesting and important subject more ably than I can,—one who would have imparted new thoughts to it, penetrated it with a new light—the keen, searching light of science,—and by these means have rendered this paper both more interesting and more useful; I say, however much this is to be regretted, I can assure you, if an anxious desire, coupled with a faithful exercise of my humble abilities, can render this paper worthy of this great occasion, or of your kind approval, then on these grounds I believe I shall have a well-grounded hope of success.

I shall now bring before you the subject we are called together to-night to consider, namely, "Influenza in the Horse," and in

doing so, for the sake of order, I shall divide it into three parts, viz.: the cause of the disease, its nature, and the treatment.

The cause of Influenza.

"The pestilence which walketh in darkness" is no fiction. Both sacred and profane writers give ample proof that from the earliest times down to the age in which we live man has been periodically startled by its silent, invisible, mysterious, and awful ravages. I can conceive of no calamity more appalling and frightful to contemplate than that of whole districts devastated, and multitudes of human beings swept off, in a few hours or a few days, by some invisible but irresistible agency. Well might the ancients in their terror attribute it to a destroying angel. But its destructive influence has not been confined to man; animals also have been from time to time swept off in great numbers, the cause or causes of which appeared at the time to be inscrutable, but in all probability it was one and the same agency, and the degree of virulence was dependent upon certain modified circumstances. Notwithstanding, whatever may be said to the contrary even in the present day, a mystery overhangs every epizootic disease, giving rise to vague and contradictory notions in reference to its precise cause. Now, upon this point, as well as upon its nature and treatment, it will be observed as we proceed that I have dared to step out from the beaten track of routine, and have ventured to advance some new theories. I am not abandoning the cause of science and progress by advancing these opinions, for I believe the question to be between progress and retrogression, and the issue we have to try is of enormous importance.

It is scarcely possible to conceive any veterinary subject that is so interesting, so protean, or capable of such extensive application, as this one is. In the first place, it is quite safe to conclude that this distemper, which has been ravaging with more or less fatality not only the whole of England, but also the continent of Europe, during this last winter, emanates from atmospheric causes, which act directly upon the organic system of nerves; but what the precise nature of that cause is, our most delicate tests have as yet failed to detect. The conclusions I have come to are as follows:— In the first place, that state of the system which we are in the habit of designating "Influenza" *is not of itself a disease at all;* it is simply a sequence, or a particular condition of the constitution, in which there is an absence of the requisite quantity of nervous energy, deranging the vital principle, and inciting irritability. In the second place, the system does not become affected through the medium of the respiration, but through the medium of the skin. I cannot believe that epizootics of this nature are dependent upon a disproportion of oxygen in the air, or to the presence of sulphuretted hydrogen, or the existence of ozone, nor yet to any organic or inorganic morbific matter in the air. I should rather attribute it to some change or modification in the magnetic or electrical state of the atmosphere, altering its relations to the living body. I will

give you my reasons for these conclusions. If the epizootic was propagated through the medium of the respiration, the tissues with which the irritant in its unspent or undiluted form came first into contact would, as a matter of course, suffer the most. If a horse or a man takes an irritant poison, and of which he dies, what do we find? Why, intense inflammation of the tissues with which the poison has come into contact. If a horse or a man is half suffocated by the fumes or dense smoke of a fire, so that in a few days he dies, what do we find? Why, intense inflammation of the mucous membrane of the air passages, and congestion of the lungs. Thus, in either case we perceive that those tissues which have come into direct actual contact with the irritant are the most severely affected, and so we should find it to be the case in influenza if it was caused by some irritant or morbific poison in the air. But what do *post-mortem* examinations of true influenza cases prove to us? They show us unmistakably it is not so, since that fine delicate membrane of the air-cells is nearly always found perfectly free from disease. Frequently, indeed, we find those tissues in a state the very reverse of congestion, inflammation, or tumefaction; they are, in fact, of a lighter colour, less in weight, and less in bulk than when in health. And even in those cases (I mean pure influenza) which go on to hydrothorax, or hydrops pericardii, this has not been preceded by the slightest inflammatory action; the fluid has exhaled out of the surface, and not exuded from the surface. I look upon these facts as almost, if not quite, proof positive that influenza is not attributable to a morbific poison, or to any putrescence in the atmosphere, or that the disease partakes of an inflammatory character.

The true cause of "Influenza" must be looked for in the *peculiar condition of the atmosphere, and the favorable state of the skin and coat of the animal himself.* I consider that the primary cause of this epizootic is a deficiency of electricity in the atmosphere during the whole of the period this distemper is prevailing, and that during the time that such deficiency exists an insensible influence is exerted upon all animals, and that the degree in which they are affected is in proportion to their susceptibility and favouring conditions. The effects produced are in the first place felt in the nervous system, and secondarily upon the vascular system. The manner in which it affects the general system is by robbing it of a greater or less quantity of animal electricity in order to bring about an equilibrium. A peculiar sensation, in many respects simulating a chill, is experienced whilst this abstracting process is going on; a creeping sensation is immediately and unmistakably felt in every part of the body; it is a prickling, uneasy feeling, often attended with rigors. During this time the system would appear to be in a perfectly passive state; the vital fluids, as well as the solids, lose much of their vital principle; there is a perceptible loss of animal heat, the skin becomes cold, and if it is permitted to go on radiating the whole system soon becomes thoroughly affected, and the vital powers are prostrated, partaking somewhat of the state of torpidity. It must not be forgotten that the skin is a perfect network of nervous

filaments, and that these nervous filaments have both direct and indirect connection with all the nervous centres, and through them with every vital organ in the body; that there exists between them the most perfect sympathy; no scientific instrument, however delicate, is more susceptible, or a more certain indicator. I will give you an example to show you that the skin is an agent of vital importance. If I drop a small quantity of alcohol upon a mouse, I can deprive it of life. The evaporation robs the surface of the skin of its heat, and the vital organs radiate their nervous energy so rapidly that the functions of life cease altogether in six minutes. Again, if I cover completely the skin of a dog or a cat with a thick covering of varnish, so as to isolate the living body from the atmosphere, and thus completely interrupt the passage of electricity, the electricity or nerve force in the system soon becomes spent and exhausted, and the functions of vitality cannot be continued. I look upon this as a proof that the radiation of heat alone is not the cause of death in the former instance, but that death was referable to the abstraction of the vital principle; and in the latter experiment the vital principle existing in the body became consumed or exhausted, and being unable to receive the necessary supply, the functions of life could not be continued. This great fact, too, must be steadily borne in mind, that every minute the animal is living, every minute he is dying; every minute he is breathing, every minute there is an exhaustion of a certain amount of vital force, which, if not recruited, must end in dissolution.

My own experience has proved to me that influenza is not dependent upon the low temperature of the air. If cold weather was an exciting cause, we should always find the greatest number of fresh cases on the day or the day after an intensely cold day and night; whereas we do not find such to be the case. I find nearly as many fresh cases during the prevalence of beautiful, fine, dry, warm weather, and a clear, crisp atmosphere, as during a wet, dull, murky state of the air. I mean, during the period this epizootic is prevalent. A long continuance of east winds may possibly contribute some of the conditions necessary to its development. I am fully persuaded there is a subtle agency in the air, and as Mr. Youatt said thirty years ago, "it is a vast, a noble field for future research; it will immortalise him who traverses successfully all its paths; but at present it is an undiscovered country, in which we should be cautious not to bewilder ourselves."

I do not wish to convey to you the idea that the whole force of the attack is instantaneous. What I want you clearly to understand is this:—Supposing an animal in perfect health, in tip-top condition, to be surrounded and pressed upon by an atmosphere which is in this peculiar state, the rapidity and intensity of the attack will be dependent upon the state of the skin and coat of such an animal as to its acting as a good conductor or a non-conductor. If the animal has a thick coat, or is clothed too much, inducing a damp state of the coat, and whilst in this state he is permitted to stand starving in a cold stable, or outside in the open

air, *that is the precise time the mischief takes place.* There needs no process of incubation in this distemper. If all the conditions are favorable to radiation, his system can contract the affection suddenly, and become infected to a degree entitling it to the term influenza in five minutes; but if the conditions are less favorable it will require twenty or thirty minutes' exposure to the same trying circumstances to produce the same effect; and in some less susceptible animals they may tolerate the influence for several days. I am decidedly of opinion that there are numbers of horses which are not at all susceptible to this influence, and even those that are susceptible, having contracted the complaint and passed through it (with very rare exceptions), they enjoy an immunity from it. It would appear that the constitution has become inured to it, and they grow and enjoy perfect health afterwards, and this, too, in the same atmosphere; not, as may be imagined, that the influence in the atmosphere has spent itself, because that is not the case; the influence is still existing in the air, which is proved by numbers of fresh cases occurring in other places in the same town; but in course of time it would appear that an equilibrium is established, and it is no longer a noxious element; the animals have become systematised or climatised. Those horses occupying the healthiest and best ventilated stables are equally liable to contract the complaint, but there is this difference with them: it is less malignant and less fatal than with those occupying less favorable stables. In this city my experience of this epizootic ranged for a period of about six months, from the beginning of November until May.

I wish to call your attention to the fact that at other times the animals may experience an ordinary chill, or have a sudden check of perspiration, and the result shall be an ordinary catarrhal affection, viz., sore throat, cough, nasal discharge, &c., &c. Such cases will be distinct cases, and not accompanied by this peculiar weakness and feeble pulse.

Contagion and Infection.—Are these among the causes of this epizootic? My experience has led me to the conclusion that they are not. I have seen much of this distemper, and have watched it closely, but up to the present time I have not observed a single clear instance of an affected animal communicating the disease to a healthy one. My own horses have, during every day for the last six months, passed close by others affected, even smelling nose to nose with some of the most inveterate and malignant cases; they have also been frequently put into the very stalls amongst them, and to all appearance they have never had for one moment a vestige of the complaint upon them. I must here remind you that contagion, strictly speaking, implies, as you know, the capability of certain diseases being produced by actual contact of the healthy animal with some part of the body of one labouring under the disease, and not through the medium of the atmosphere. On the other hand, infection is the word used to denote the propagation of maladies through the medium of the air, which has become charged with the contaminating principle, given off in the form of exhala-

tions from the diseased animal, and which excites the like disease in those animals that are subjected to its influence, they being predisposed to take on the malady.

The Nature of Influenza.

Most forms of influenza have been noted for affecting severely the mucous membranes of the air-passages; but in this present epizootic (with only rare exceptions) nothing has occurred of the kind that has attracted notice. They may differ in several points of detail, but they have all many phases in common.

I hold in my hand a treatise on 'Influenza in the Horse,' written by Mr. W. C. Spooner, of Southampton, in 1837. It contains not only his own views, but also an ably-written essay upon the same subject by Professor Sewell. A very valuable discussion followed the reading of this essay, in which we have the opinions of Professor Spooner, Messrs. Field, Turner, Youatt, Dickens, Braby, Cheetham, Sibbald, and Ainslie. This treatise contains also the opinions of Stewart, William Percival, Karkeek, and others. I have carefully perused the whole of these valuable opinions, also the practical papers written upon the same subject by Professor Barlow and Finlay Dun, published in the *Veterinarian* for 1853, as well as Mr. Bloag's, Mr. Armatage's, and many others. I have perused them for the purpose of gleaning knowledge, and enabling me to render these pages more worthy of your approval. I find Professor Sewell, Karkeek, and some other eminent men, attribute "Influenza" to a meteoric or volcanic origin. Many of them view it as inflammatory in its nature, but since that period opinions have changed; men's views upon this and many other diseases have undergone important changes, and a change has undoubtedly taken place in the type of disease itself. We very rarely now-a-days see a clear, well-defined case of local inflammation. In the present day the constitution of neither man nor animal can tolerate the old-fashioned, heroic, coercive treatment which was formerly employed. Enlightened and scientific men have discovered that in the present day a milder plan of treatment is more successful, it being more in accordance with the altered conditions. I speak this to the honour of our friend Mr. William Haycock, since he was one of the very first who discerned and had moral courage enough to propagate this great truth. I have not yet had an opportunity of perusing the last work out—a treatise on the late epidemic, 'Gastritis Mucosa,' by Mr. W. C. Lord.

For the sake of clearness of description, I shall divide this subject —the nature of Influenza—into two classes, viz., Influenza, and Complicated Influenza.

Influenza.—This is an Italian word, and means influence. The nervous system is directly and primarily acted upon, and secondarily the vascular system becomes involved in its influence. The animal appears to be suddenly deprived of the requisite quantity of vigour or vital stimulus necessary for the due performance of the vital actions. I am of opinion the whole system suffers alike—not only

the vital organs, viz., the brain, heart, lungs, liver, &c., &c., but also the vital fluids, and every tissue in the whole frame, is deficient in nerve force or animal electricity. The first observable symptoms are cold skin, loss of appetite, dulness. listlessness, pulse small and feeble, becoming quicker and quicker, ranging from 60 to 80, and in some cases getting up to 100 beats in a minute; breathing not always disturbed; a prickling uneasiness in the legs and feet, which is soon followed by swelling about the fetlocks and eyelids; an excitable, susceptible state of the bowels is observed, the fæces being voided frequently, which are soft and scanty; in some instances we have spontaneous diarrhœa; in severe cases we have an effusion of lymph into the chambers of the eye; the mouth is not particularly hot, neither are the visible mucous membranes highly injected; there is morbid capillary action generally, and the disease usually pursues a uniform course, and is not marked by natural and distinct stages. I feel no doubt that in some of the cases of severe influenza headache is experienced to a very great extent. In several of my patients I have observed, during months after the attack, that symptoms approaching to megrims have hung about them, rendering them completely useless; the animals have occasional fits, and if backed, or the head raised suddenly, they will stagger and fall down. This state of things is the result of some thickening of the membranes of the brain, meningitis, or else effusion into the ventricles, occasioning vertigo. I have had three such cases. Bleeding, laxatives, alteratives, vegetable and mineral tonics, were freely resorted to without any improvement whatever resulting; but by the employment of long setons—two over the front of the head and two behind the poll—for three or four weeks, the recovery was perfected in each case. The organ which seems to suffer most is the central organ of circulation, the heart. It is deprived of its wonted vigour; is unable to empty itself in its systolic and diastolic action; a portion of blood remains in the ventricles, and the organ is feebly but irritably labouring, agitating, and beating upon the same charge of blood over and over again; the fibrin of the blood attaching itself to the tricuspid and bicuspid valves renders their action imperfect, and hence the diminished, if not suspended, *vis à tergo* or force from behind. This will account in some measure for the small feeble and almost bloodless pulse. On this point I beg to refer you to my paper in the *Veterinarian* for last March. Since I wrote that paper I have been kindly informed that Professor Dick discerned and described the same fact twenty years ago. I was perfectly unaware of this at the time I wrote the article. There is also another symptom which in some cases occurs to a most remarkable extent, and my friend Mr. Haycock has reminded me not to omit noticing this symptom. I allude to the great irregularity or intermittency of the pulse. I have observed it in many cases, but by no means in all. In some we detect a total omission of pulsation for five or six seconds, and this will occur three or four times in every minute. This peculiarity will exist in a particular case all through the attack, and in some few

cases for months after entire recovery. I do not attribute any very great importance to this peculiar symptom. It is, however, an exceedingly interesting coincidence to notice, and I always view it as a favorable omen. I consider it to result from nervous debility, and I am more than half inclined to believe that in every case in which there is an intermittent pulse there exists a clot of blood in the heart. How often do we find horses affected with influenza dying suddenly and unexpectedly. Now, what is the explanation of this? *Post-mortem* examination shows that there was neither active nor chronic disease in any of the vital organs to cause death, nor a rupture of any. Were it a human being, it would be said he died of spasm of the valves of the heart. I have no doubt in every such death that life passes away in the tranquil sleep of death, as an inevitable result of sinking and syncope.

In some few cases it would appear that the whole virulence of the disease concentrates itself in some local and superficial part; in the leg, for instance, or between the lower maxillary bones, where deep, sloughing ulcers occur, as if death of the parts had taken place. These cases generally do badly, since there is not a sufficiency of vitality to enable them to resist the influence of the disease. Whenever the patient begins to lie down, it may be looked upon as an unquestionably good sign. As the patient is recovering, he generally lies down a good deal. In some few instances the animals will lie down from the first several times in the day, as if the abdominal viscera were the organs involved. I have generally found those cases where the eyes and legs have become swollen to have gone on most favorably, or rather, if they have not got through it in the least time, there has appeared to be less danger to life, even though some acute cases have been so lame as to be perspiring freely for one or two days from the pain in their legs, and to be unable to stand long together, or get up of themselves when down.

Symptoms of Complicated Influenza.—By this term I mean horses having some previous disease upon them becoming attacked with this distemper; or else, whilst suffering under an attack of influenza, it assumes a malignant, subacute type, locating itself in some vital organ. In either case they are dangerous, and will be found most difficult cases to treat. They are often intractible, frequently running on to effusion or tuberculated lungs.

Some of them are not difficult to diagnose. You will find you cannot produce and maintain healthy reaction in these as in other cases; the more alarming symptoms keep up longer; our patient has an unusually foul, clammy mouth, emitting an offensive odour; there is a dirty, yellow tint of the buccal membrane and conjunctiva; the bowels are always sluggish, the fæces dry, hard, and coated; the secretions are generally suspended; the diseased organ will experience the full force of the deficiency of animal electricity, and the result in the majority of such cases is, that the parenchyma of the organ goes on to the putrid stage, and in seven or ten days death closes the scene.

We will now examine this question from another point of view,

as I am very anxious to make the fullest investigation into the nature of influenza. Let us follow our patient to the knacker's yard, and there make a careful *post-mortem* examination of the body. What do we find? In complicated cases we meet with a great variety of disorganisations and lesions. In some there are extensive and dreadful alterations of structure, generally in the lungs, with effusion of lymph attached externally to the pericardium, and fibrinous attachments to the pleura. But in all cases of simple influenza it is perfectly immaterial whether the subject be an old horse or a young one; whether he be in a state of high fleshy condition or a lean and low one; if he has died of influenza there will be no trace whatever of disease in any of the vital organs, at least none obvious to the anatomist; but there will be found one leading feature invariably present, viz., a soft, flabby, pulpy condition of all the muscular structures throughout the body, and also in every one of the vital organs. These tissues are all blanched, and of a pale, clay colour, as if the whole system had been blighted or blasted, as if the fire of vitality had burnt out, leaving a white ash only. It would appear that the arterial blood has lost its vermilion colour. This is the state of the body in which there has not been a lingering illness, but in an altogether recent case. To elucidate more clearly what I mean, and thus render myself better understood, I will illustrate it by two examples. I have spoken of nerve force. Now, we all know that a palsied limb is consequent upon either complete or partial loss of nervous power, and if a *post-mortem* examination be made of a limb recently palsied, it is found that the flesh is soft, flabby, and pulpy; it is blanched and of a pale, clay colour, exactly in the same state as we find in cases that have died of influenza. Again, if we examine a body that has been killed by lightning—and it has been my lot to make a *post-mortem* examination of three subjects, one of them was a horse, the other two were cows. They had all died instantaneously in the field, having been up to that moment in perfect health. I examined them with the greatest care, and could not detect the faintest trace of disease anywhere, but in every case there was the same soft, flabby, pulpy state of the flesh, which was blanched and of a pale, clay colour, exactly the same as is found in horses that have died of influenza. At different parts of the body the hair or coat was singed, and a strong smell of burnt hair existed; the skin at these parts was black, as if it had been bruised. The electric fluid, I had no doubt, had passed in or out at these points. To call this peculiar condition of the muscular structure disease is, I maintain, a fallacy; as much so as if I was to take you to yonder butcher's shop, show you that white veal, and tell you its very whiteness was the result or dependent upon diseased action. I contend that an animal being struck down by lightning, and being attacked with influenza, is precisely one and the same thing in its nature; the same vital element is abstracted, suspended, or destroyed in the one case as is abstracted, suspended, or destroyed in the other. I feel no doubt whatever that those cases struck by lightning are instantaneously and completely deprived of animal

electricity, and the function of vitality ceases at once. Influenza is only a modified form of this very phenomenon; the one being instantaneous and complcte, the other gradual, imperceptible, and incomplete; fortunately affording an opportunity at this important and critical juncture for the veterinary surgeon to step in, and by the employment of wise and well-considered treatment to fan the flickering flame of life, to steady it until nature rallies, reaction is established, and life is saved.

The Treatment of Complicated Influenza.

In a practical point of view this question demands from us a more careful consideration than any other. I therefore entreat you to favour me with your particular attention as we approach this division of my subject. The very life of our patient frequently depends upon our correct diagnosis, and there are many cases that require all the practical ability and enlightened judgment we can exercise to clearly comprehend them. The young or over-confident practitioner may, perhaps, think differently, but experience and close observation will show him how greatly he has erred. How much I wish I was endowed with those powers that would enable me to clear away all the mists which surround this part of my subject. In a former part of this paper I have endeavoured to lay down some landmarks as distinctive symptoms to guide us in discriminating and forming an opinion. Let us presume, then, that we are at this moment standing by the side of our patient, and that we have decided in our own minds that it is a case that comes under the denomination of "Complicated Influenza;" that is, the influenza has located itself in some vital organ, and assumed a sub-acute and malignant type. Now comes the question, What is the best treatment to be adopted? I maintain that it is a sacred duty we owe to society to ascertain, if we possibly can, the most successful plan of treatment, and at once to adopt it. I therefore ask every member in this room for his best advice and information. Let the world see that we are ever learning. Let us make the inquiry first, Is venesection or vesication indicated? The impression upon my mind is that they are not. The conclusions I have formed during a pretty extensive experience, a life spent amongst large plethoric horses, is, that nature will not tolerate coercion; that she can repair damages much better than we can do; she does it in less time, and does it, too, more effectually; that the vital force has a greater curative power than any of the remedies we possess, and what she does she does freely and spontaneously, if we will only give her fair play.

Bleeding.—My experience has satisfied me that it is dangerous to bleed in these cases. Even if done cautiously, if it does not entail fatal consequences, we have a more protracted period of convalescence. I am aware that some cases which are bled recover, but as a rule I feel quite satisfied that the chances of recovery are much more in an animal's favour where there has been none of

the vital fluid abstracted. But upon this question I very earnestly invite your opinion.

Counter Irritation.—I will take it for granted that no one will advocate severe blisters extensively applied to the throat and sides in these cases. But in condemning blisters I must give a reason for so doing. In the first place I create a supplemental or additional inflammation, thus doubling the constitutional disturbance, driving the blood with increased fury through the system, especially so through the diseased organ, helping to exhaust it and break down its structure, thus causing irreparable damage. I am, in fact, stirring up the very embers I am so anxious to extinguish. Hence the mischief, and why I contend it is most reprehensible practice. But besides this, we have the serious sympathetic disturbance set up in the system from the absorption of the blistering fly. As it respects the stimulating effects of a mustard compound applied in moderation to the throat and sides, in some cases, at a certain stage, I am convinced it is attended with beneficial results. It appears to rouse the dormant energies of nature, and helps to disperse the tendencies to congestion. Then come the questions, What is the best time to apply it—at the earliest moment, or on the next day? How frequent ought it to be applied? Is it most advantageous to employ it after or before the hot-water rug over the sides? These are questions which I invite you to assist me in correctly answering. My friend Mr. Lawson informs me that his success in these kinds of cases is greater when he employs mustard more generally, and applies it in the early stage. The other day I saw a horse in Mr. Mavor's infirmary, London, to which they had applied a poultice compound of mustard and linseed meal, spread upon flannel, and then laid it upon the bare sides. This was done within half an hour from the animal's coming into the place. Mr. Mavor informed me this was their regular custom when they suspected the disease was locating itself in the chest. He also spoke very highly of the steam-bath to the sides. This, too, I think cannot be too highly estimated in these cases. I am much in favour of rugs dipped in hot water being applied to the sides, if there is a little accelerated breathing, or any soreness of the pleura.

Setons and Rowels.—If we insert either a rowel or a seton in these cases we shall find that it will not suppurate kindly, but instead an angry, unhealthy inflammation will be set up, causing much mischief from sympathetic fever; and this will be followed by deep and extensive sloughing, so that occasionally it has been found necessary not only to take out the seton or rowel, but also to soothe the angry swelling by fomentation, scarification, &c., &c.; and instances are not uncommon in which the very life of the animal has been sacrificed by their injudicious use.

Therapeutics.—My mode of procedure in these cases is very similar to the plan I adopt in simple influenza. I keep my patient's head tied to the open door day and night, and administer stimulants and tonics. I have heard the iodide of potassium and also the

chlorate of potass extolled; but I cannot speak of their utility. Upon this subject I likewise invite you to give me your opinion. Diuretic medicines have undoubtedly a considerable power in removing edema and other deposits, but they have no power in resisting or arresting the process of effusion or exudation; indeed, contradictory as it may appear to many of you, I am inclined to the opinion that if the real truth could be fully known, it would be found that the effusion is actually facilitated during the action of diuretic agents. This we do know, that during the operation of cathartic substances, which are abstracting the watery parts of the blood by way of the bowels, the same as diuretics do by way of the kidneys, that during this action the process of effusion goes on more rapidly. Sulphate of magnesia has been highly spoken of in doses of four ounces, given twice a day, as an alterative or febrifuge and purifier of the blood.

Now it has frequently occurred in my experience that a patient shall rally up to a given point, and then become stationary for several days, the breathing remaining a little accelerated, the pulse standing at 60, 72, or 80, and the symptoms, taken altogether, do not indicate that my patient is actually progressing nor yet retrograding, but still neither his breathing nor his pulse settles. This is a most critical time, and it is of vital importance that we should be able to discriminate with sound judgment. This state of things may be entirely dependent upon weakness, and with a little patience and assistance all will come out right in the end; or it may be the result of disordered and confined bowels, and the unsatisfactory state of the secretions generally. But, to say the least of it, this is always an ugly symptom, and generally it may be concluded the disease is drifting onwards, is making insiduous advances. Now, without for one moment undervaluing the importance of attending to the bowels, it is of the utmost consequence to act judiciously, for an error made now will throw all the chances against the patient. Two drachms of aloes, or eight ounces of oil, given now, especially if his stomach and bowels are comparatively speaking empty, is sufficient to kill the largest and best horse alive. The aloes gets into the system, and acts as a deadly poison, or else its action is immediately followed by constipation. Still we can make no progress with our patient until the bowels are got to act satisfactorily. Under such circumstances I rely upon enemas and frequent draughts of cold water, and if the patient is eating moderately I may give one drachm of aloes, or half a drachm of calomel, or two ounces of linseed oil, once every twelve hours. This will generally be found sufficient for all purposes. But after all is said and done, a great number of these kind of cases die, and when we discuss this question it will be well if gentlemen would not let the idea prevail that the admission of a few unsuccessful cases implies a discredit, and instead of this give unvarying success as an excuse for not knowing what *post-mortem* investigation discloses. This sensitiveness operates prejudicially to the success of these associations, and is inimical to the cause of truth. I frankly admit I have

had numbers of dead horses. Some of them were placed under my care in the last stage of the disease; others at its earliest moment, and then I had everything in my favour; but towards each and all I exercised my best judgment, and employed what I conceived to be the best remedies. I repeat, these discussions should lead us to adopt the most successful treatment; but in the midst of our anxiety we must not forget this truth, that neither man nor horse was intended to be a permanent sojourner here, but that both were born to die.

The Treatment of Influenza.

I now approach the last, but perhaps the most interesting, division of my subject. If the horse is observed just as he is in the act of contracting the epizootic, and when in this incipient stage proper remedies are at once employed, it will be found that it is only an ephemeral disturbance. In such a case I am very fond of administering a pint of warm ale, with a table-spoonful of powdered ginger in it, and the same quantity of powdered aniseeds. The effect produced is so satisfactory, in nearly every case, that it would appear to be the very stimulant required at the time. Any diffusible stimulant that acts as an excitant, even brisk exercise or considerable friction to the skin, is of great benefit. Get the skin thoroughly warm, supply the animal with cool, fresh air, and you have a reaction immediately established, the progress of the affection is arrested, and the system seems to assume an altered electrical condition. I do not say that this plan neutralizes the invisible influence which is exerting itself from without, but I contend that it excites and maintains an artificial spirit and vitality until the process of causing an equilibrium is completed. If some hours have elapsed, and the vascular system has become involved, I administer Spirit Ether Nitrici et Tinct. Pimento, of each one ounce, in four ounces warm water, every six hours. Or the spirit of Nitrous Ether may be combined with Liquor Ammoniæ Acetatis. Keep the horse's head tied to the open door, and as the legs and feet, generally speaking, are hot and tender, they will keep themselves warm, and the simple pressure of a bandage will produce pain. Always take care to regulate the quantity of clothing to the state of the heat of the skin. You may produce great mischief by smothering the skin with too much clothing, and thus increase the fever and cause your patient to commence blowing. I am convinced, also, that there are some circumstances in which our patients cannot tolerate diaphoresis. In most cases I remove all the shoes; but if my patient has pumiced feet, of course I do not do so. If the pain in his legs is considerable I may place them in warm water, use the arnica lotion, and even poultice the feet. In the worst of cases I have found great relief afforded by putting on patten shoes, and thus raising the heels of the feet. There are some cases that do better with carbonate of ammonia and ginger, two drachms of each, given every six hours. It is necessary to watch the effects of this compound, which must be discontinued after a certain point is gained.

After a few doses we shall perceive that the salivary glands have become acted upon, and I have no doubt the glandular system generally throughout the body are acted upon, being more or less stimulated by it. It is a beautiful stimulant to the nerves of the stomach, and also to the nerves of the chest. It does not nauseate, but will produce a nice pultaceous state of the bowels, and cleanse all the mucous membranes. If continued too long, or given in too large doses, it will produce purging. I verily believe I can accomplish everything by it that we can effect by calomel, except nausea and salivation. When the fever runs high, the pulse being 88 or 92, I may give the extract of belladonna in doses of one drachm twice a day. I never give any medicines in the form of draught, for if there is any soreness of the throat it is attended with much danger, and is very reprehensible. In these cases it is advisable to give enemas twice a day. In some instances of unusually thick coat I have had my patient clipped, with almost magical good effect. As to diet, I give cold water to drink, a quart every hour or every half hour, or the animal may have bran tea, linseed tea, and some rock salt left in his manger. Give him malt mashes to eat, or sweet turnips, carrots, or oatstraw with the oats in it, and plenty of wild mint in it; likewise fresh grass or clover, sweet hay, &c. In fact, I do all I can to keep my patient taking a little food.

It will be gathered from what I have advanced that in a vast majority of successful cases it is to the secret processes of nature, in my opinion, and not so much to the action of medicine, that the credit belongs; and as I view the beautiful theory of health and disease, this conclusion is irresistibly forced upon me, that man, in his short-sightedness, his vanity, and selfishness, has never sufficiently comprehended and appreciated the great fundamental truth, that Nature is an ever wise economist; that she does all things well.

The discussion that followed was animated and long, the following gentlemen giving their opinions freely and candidly, viz.:—Messrs. McTaggart, C. Secker, Friend, Naylor, Freeman, sen., Carter, Cuthbert, T. Secker, and the Secretary. Mr. Greaves having briefly replied, the *President* summed up the arguments in the appended remarks.

REMARKS ON INFLUENZA, BY THE PRESIDENT, MR. E. C. DRAY.

The parts principally affected in this disease are the brain and nerves, the spinal column, and the serous or exhalent structures. The dispiritedness and indications of pain in the head, together with the augmented sensibility of many parts, are sufficient to warrant us in inferring that cerebral and nervous derangement, or excitation, or fever, is set up in the constitution, in consequence of the system having received some alarm, produced from some external influence, presumed to be atmospheric, but which we are

as yet not sufficiently advanced to decide, indeed, the nature of the fever we are as ignorant of as we are of the cause. We see it in an inflammatory form, next in a state of decline, appearing as if it was taking its departure; but in others, instead of withdrawing, altering into a low, debilitative character, and in that form lingering about the animal for an indefinite period, thereby causing fresh mischief, such as local inflammations, swellings, abscesses, or diseased lungs. That the fever is specific or rare is demonstrated by different singular local disorders accompanying it, by its progress and direction, and the insignificant command we have over it by medicine. Whether it is infectious or contagious, opinions differ; but this doubt ought not to deter us from carrying out every hygienic principle. That it is neither very fatal nor virulent in its nature is proved by its fleeting and adventitious qualities, and by rapid convalescence. That its production is linked with atmospheric causes appears feasible from the fact of its annually appearing in London and other localities, and generally with an unvarying aspect. That we are not in possession of any specific remedy for it may be confidently stated, from the circumstance of its disappearing, or terminating in restored health, under numerous methods of treatment. Those practitioners have been the most fortunate who have done little more than look on, at the same time taking care that those influences which are productive of mischief should be removed, and carefully guarding that no organ, especially the lungs, become affected.

The next meeting of the society is to be held at Halifax, in October. This being the last quarterly meeting for the year, the election of office-bearers for the next will take place; therefore it is hoped that every member will be present.

W. Williams, Bradford,
Hon. Sec.

LIVERPOOL VETERINARY MEDICAL ASSOCIATION.

OFFICIAL REPORT.

The usual Quarterly Meeting of the above Association was held in the Medical Institution, Hope Street, Liverpool, on the evening of Friday the 11th of August. The following gentlemen were present:—Mr. Lucas, President; Messrs. Briscoe, Wilson, Morgan, Brydon, Simpson, jun., Harwood, and Leather, of Liverpool; Mr. P. Taylor, President of the Lancashire Veterinary Medical Association; Messrs. Greaves and Haycock, of Manchester; W. A; Cartwright, Whitechurch; Williams, Hon. Sec., Yorkshire Veterinary Medical Association; Whittle, Worsley; Storrar, Chester; Wood, Wigan; Dobie, Birkenhead; J. Edwards, Abergele; and T. Walley, West Derby.

After tea (which was kindly provided by the President for all present), the President took the chair, and the minutes of the former meeting having been read and confirmed, a communication was received from Mr. Haycock, stating that circumstances had prevented his being able to write a paper on "Canker in the Foot of the Horse," as announced at the last meeting of the Association, but that he was prepared with another essay, on perhaps quite as interesting a subject, which he would read to the members if it met with their approval. This being accorded, Mr. Haycock read the following very able essay on—

DISEASE, ITS CAUSATION AND GENERAL CHARACTER.

In 'Hooper's Medical Dictionary,' article "Disease," you will find the following division of this important subject—a division so simple and direct in its character that no apology is needed on my part for adopting it:

"Diseases," says the writer, "may be—

"*Local, i. e.* affecting some particular part.

"*Constitutional.*—Affecting the entire organism.

"*Specific.*—Marked by some disordered vital action, not common to disease in general, but peculiar to the individual disease.

"*Idiopathic.*—Primary, and not dependent on any other disease.

"*Symptomatic or Sympathetic.*—Dependent on and accompanying some other disease.

"*Periodical.*—Recurring at fixed periods.

"*Acute.*—Severe, and of short continuance.

"*Chronic.*—Of long continuance.

"*Sporadic.*—Arising from adventitious causes affecting the individual.

"*Epidemic.*—Prevailing generally, and arising either from contagion or some atmospheric cause, the influence of which is felt extensively.

"*Endemic.*—Peculiar to, or especially prevalent in, a certain district or region.

"*Contagious or Infectious.*—Communicable from one individual to another, by personal contact or by effluvia diffused through the air.

"*Congenital.*—Born with the individual.

"*Hereditary.*—Descending from the parents to offspring.

"*Acquired.*—Neither hereditary nor congenital, but dependent on some cause operating after birth.

"*Sthenic.*—Attended with strong activity of the life powers.

"*Asthenic.*—Attended with sinking of the life powers.

"In addition to the above, other distinctions of disease may be made of more limited application; thus, diseases are *febrile, i. e.* attended with fever; *exanthematous, i. e.* attended with eruption; *intermittent,* marked by a regular cessation and recurrence of symptoms; *remittent,* marked by a regular diminution and return of the symptoms.

"*Mild*, unaccompanied with any symptoms of a formidable nature.
"*Malignant.*—Severely depressing to the life powers or highly dangerous and intractable.
"*Puerperal, i. e.* incident to the puerperal period; and so forth."

By this arrangement of the subject we obtain, comparatively speaking, a very complete picture of the various conditions, specialities, and associations, under which disease is presented to our notice.

The next question (and a most essential one it is) is this, *What is disease?* To answer it properly requires us in the first place to determine what life is, for the doctrine of disease is inseparably associated with the doctrine of life.

The healthy functions of the organism constitute the province of the physiologist; the structure of the organs performing the various functions belongs to the anatomist; and it is with the derangements of both functions and organs, so far as the lower animals alone are concerned, that constitutes the peculiar province of the veterinary surgeon. Hence in our province, as in that of the human surgeon, the inseparable relation of the doctrine of life to the doctrine of disease.

An intimate knowledge of healthy structure is vitally essential to an intimate knowledge of healthy function.

An intimate knowledge of healthy function is vitally essential to an intimate knowledge of disease; and all disease is either deranged vital force which terminates as such merely, or deranged vital force producing an alteration or derangement of structure.

Gentlemen, What is life? A question which the present state of our knowledge does not permit us to answer. Innumerable doctrines, both in ancient and modern times, have been put forth respecting the nature and origin of life, which have all this character in common—they are the highest expression, so to speak, of the predominating philosophies peculiar to the time of their appearance.

The tendency of physiologists of the present day is to regard the living principle as a mere combination, consisting of chemical and mechanical forces.

It is true the functions of mastication, insalivation, and deglutition, are simply mechanical actions; that digestion, respiration, the production of animal heat, and the waste of tissue, are all simple and, in themselves, chemical actions.

But allow me to ask, What is the nature of that central power which keeps this animal organization working, growing, digesting, assimilating, carbon burning, decaying, and renovating itself, year after year, in the manner we behold it?

What is this central power, I repeat, which presides over all, and regulates all, as a king presides upon his throne and regulates the most distant affairs of his kingdom?

Why, gentlemen, it is just the vital principle.

Bear in mind, then, this entity or principle I speak of is not a chemical or a mechanical power; nor yet galvanism nor electricity;

nor, so far as we know, any modification of these forces; but it is an original power or principle which seizes upon the elements of the external world, and the forces which are bottled up, as it were, within them, and by its directing, controlling, and organizing power it builds up and vitalises the wondrous forms we behold in the animal and vegetable worlds.

The next step in our inquiry relates to health. *What is health?* To define this in a way to fully meet the requirements of the question is difficult. We can only properly define a thing by telling all about it.

The principal conditions of health in a horse are as follows:— The animal looks well, feeds well, rests well, and performs his apportioned labour with ease to himself and satisfaction to his owner.

Well, he may present all the above essentials, and yet be diseased in a way that is incurable.

An exposition of all the various functions of the body in their normal state is the physiology of health. An exposition of any or all of the various functions of the body abnormally performed is *the physiology of disease.*

The causes which produce health are resident within and without the body of the animal.

The causes which produce disease are in like manner resident within and without the body of the animal.

External agents, when brought under proper conditions in immediate contact with the organism, produce by their normal action a constant wasting and death of the nervous tissues, which is as speedily replaced by new material, out of which is formed new tissue.

The same agents, when brought under improper conditions in immediate contact with the same organism, may speedily produce by their abnormal action (unless prevented by competent skill) complete derangement and death of all the tissues. So that you perceive, gentlemen, the more closely we regard this matter the more closely we discover that disease is simply the natural forces of the organism deranged or perverted in their action.

From our present consideration of disease we naturally pass to a consideration of its causes.

The causes of disease have been variously named and arranged; they have been denominated *external* or extrinsic, *internal* or *intrinsic*, according as they operate upon the animal from *without* or *within.*

They have also been called *principal* and *accessory* or concurrent, disease proceeding chiefly from the former with the assistance of the latter. They have also been named *positive* and *negative*, from the manner in which they act upon the system.

The division, however, which has been generally adopted is into *remote* and *proximate* or immediate, according to their relation to the disease occasioned by them; the *remote* being the first in the chain of causation, the proximate or immediate those early changes

which they effect in the system, and which constitute the first or primary condition of the disease.

The remote causes have been again divided into *predisposing* and exciting or occasional causes; the predisposing being those which influence the condition of the various functions, so as to favour the operation of those exciting causes whence disease more immediately springs.

The etiology now given is that usually adopted by the schools and by the generality of writers upon disease.

I beg to propose the following, not as being more true (for the arrangement given and the one I propose are convertible), but as more simple, and, perhaps, upon the whole, more comprehensive in its nature.

From every consideration which I have been enabled to bestow upon this question, it appears to me that all diseases may be classified under one of the three following orders, viz. *vital diseases;* secondly, *chemical diseases;* thirdly, *mechanical diseases.*

Regarding the matter in this light, the disease and the cause of the disease in numerous instances are not only to be viewed, but to be *treated* also, as inseparable. Or, again, we may say that all diseases originate from one of a threefold order of causes, viz. vital, *chemical*, and mechanical; or from two of these classes of causes acting in association. One, and perhaps the chief, difficulty in accepting this classification of disease is to know at all times where the vital forms terminate and the chemical begins, or where the chemical forms terminate and the vital begin; the two in all cases may be viewed as perfectly distinct in the mind, while in practice, in the majority of instances, we shall perhaps find them inseparable.

Vital causes, organic causes.—In our investigations into the causes of disease it is important that we consider the organization and the forms resident within the organization of the animal itself. The organism and vital endowments of the horse are equally the cause of disease, as are any or all of the innumerable external causes to which morbid action is usually attributed. Elements of the greatest necessity and natural good to the animal under the normal conditions of life may, if allowed under other circumstances, as when the horse is affected with severe exhaustion and debility, arising either from disease or excessive labour, be productive of serious distubance or even death to the patient; these states, however, could not be unless the *vital* condition of the animal was such as to permit them.

Organic causes of disease (and health as well) naturally present themselves under two conditions—first, to such as have reference to the various forms of systemic disease; the second, to such as have reference to local diseases.

The first comprises the heart and the lungs; the second, defective formation of the limbs, organs, and various parts of the frame. How far the second class of organic causes may be de-

pendent upon the peculiar organic operation of the former, is a question worthy of the most earnest attention of the physiologist.

The living energy of the horse (taking a hasty view of the question) may be stated to depend upon the SIZE and the *power* of the heart and the capacity of the lungs — the heart to propel the blood, the lungs to purify it.

I am perfectly aware of other important and, indeed, absolute conditions in the production and maintenance of the vital energy, such as the vital energy of the great nervous centres—the supply *to* the digestive organs, and afterwards *by* the digestive organs, of an abundance of blood-forming materials—the supply of oxygen to the lungs, and so forth; but an inquiry into these conditions I set aside upon the present occasion, not as foreign to our purpose, but as not immediately necessary to it.

The size and power of the heart of the horse, as a cause of health or of disease to the animal, are questions which have not received that attention from veterinary surgeons which they merit. I am not aware, indeed, that any of our various writers have referred even to the subject.

The facts which I shall present I think you will find conclusive.

TABLE

No.	Sex.	Colour.	Breed.	Height. hnds.	Height. in.	History of the animal.
1	Horse	Dark bay	Cob	14	0	Was in the possession of his last owner for three years; never was ill during that period, save from a slight attack of epidemic; never known to be affected with disease prior to coming into possession of the last owner. (See *Veterinarian*, 1848, p. 18)*
2	Horse	Brown, black legs	Light draught-breed	15	2	Was purchased by owner when four years old; was in the family thirty years; was ill once with subacute pneumonia; subsequently suffered from megrims and lymphatitis. His labour up to his twenty-seventh year was always severe, since then he has been more favoured. (See Contribution 1)
3	Mare	Dark brown, black legs	Well-bred	12	0	Was in the possession of last owner eleven years; was always remarkably well, and could endure very great fatigue; never known to be ill. (See Contribution 2, Case 2)
4	Horse	Brown, black legs	Cob	14	2	Belonged to last owner for three years; never ill during that period; never known to be ill previously. (See Contribution 2, Case 4)
5	Mare	Bay, black legs	More than one-half-bred	15	0	Last owner had her thirteen years, during which period she was always healthy; never known to be affected with disease. (See Contribution 5, Case 1)
6	Mare	Bright bay, black legs	Nearly thorough-bred	13	3	Was in possession of last owner for three years and five months; not affected with disease during that period; previous history cannot be learnt; well known for her great speed and endurance of fatigue. (See Contribution 5, Case 3)
7	Horse	Dark brown, black legs	Cob	14	2	Was in possession of last owner for ten years; never suffered from disease during that period; was noted for his great speed as a trotter, and as possessing extraordinary powers of endurance; became affected with a cough twelve months before death cause not known. (See Contribution 8, Case 2)

* The facts here stated are principally collated from a series of papers contributed not referenced are from

No. I.

Age at death, at least—	Kind of labour, and duration of ditto.	Cause of death.	Weight of heart.	Additional observations.
Yrs.			lb. oz.	
18	Saddle and harness; his labour during the last three years regular and not severe	Accidental; collision with a truck in the street	7 0	The height of every horse is given exclusive of the shoes, except *Eclipse*, and whether the shoes are included in his height or not I cannot tell, nor do I possess any means of ascertaining.
34	Principally for draught; when young was driven a good deal in harness	Destroyed on account of old age	9 11	The weight of every heart given is that of the organ carefully freed from fat.
14	Principally for harness; sometimes severe, being driven long distances	Congestion of the lungs, from being over-fed and afterwards severely driven	6 9	Average weight of all the hearts in this table, including the heart of *Eclipse*, 9 lb. 5 oz.
9	Saddle and harness; at times long severe journeys	Congestion of the lungs, in consequence of being over-ridden and then exposed to cold and wet	7 11	
16	General purposes; saddle or harness; regular, and never severe	Inflammation of the bowels, cause not known	8 6½	
8	Saddle and harness, and sometimes hunted; not regularly very severe	Concussion of the brain, causing coma and death	7 5	
17	Draught, on a farm; saddle and harness; occasionally very severely worked	Asphyxia, from the formation of an abscess in trachea	8 8	

by the author to the *Veterinarian* during the years 1848, 1849, and 1850. Those
the author's Case Book.

No.	Sex.	Colour.	Breed.	Height.	History of the animal.
				hnds. in.	
8	Horse	Dark brown	Light draught-breed	15 2	Was in possession of last owner for, seven years, during which period was always healthy, and could endure any amount of fatigue; never known to have a cough. (See Contribution 8, Case 4)
9	Mare	Light bay, black legs	Light draught-breed	15 3	In possession of last owner three years prior to death; was never affected with disease from being a foal till within six months of her death, when she had an attack of epidemic catarrh, which left a cough. (See Contribution 3, Case 2)
10	Mare	Gray	Light draught-breed	15 3	In possession of last owner for six months prior to death; up to this period she had been remarkably healthy. (See *Veterinarian*, 1850, page 252)
11	Mare	Dark bay, black legs	Cob	15 0	In possession of last owner for six years; never known to have an hour's sickness in her life; was noted for her trotting powers and great endurance of fatigue
12	Mare	Dark brown	Cob	14 3	Bred by owner; never affected with disease of any kind, save strangles at two years of age; was noted for her great speed and endurance of fatigue; to use the language of the owner, "*she was never done.*" The day before her death she trotted two miles in a trifle under seven minutes
13	Mare	Dark bay	More than three-parts-bred	15 1	In possession of last owners for five years; had never suffered from disease to their knowledge; previous history uncertain; was of very wiry formation; well known by many to be a fast mare, and one that could bear almost any amount of fatigue
14	Mare	Light bay, black legs	Nearly thorough-bred	13 3½	Bought by last owner at two years old; in his possession five years; had strangles at three years of age, and on another occasion was affected by cough, neither affections requiring professional assistance; was noted for being a fast goer in harness; could gallop and leap well, and, to use a common phrase, "was as tough as pin-wire"

Age at death, at least—	Kind of labour, and duration of ditto.	Cause of death.	Weight of heart.	Additional observations.
Yrs.			lb. oz.	
15	Draught; last seven years heavy and laborious	Rupture of the stomach	9 8	The height of every horse is given exclusive of the shoes, except *Eclipse*, and whether the shoes are included in his height or not I cannot tell, nor do I possess any means of ascertaining.
9	Carting; regular and sometimes very severe	Typhoid pneumonia	8 8	
7	General purposes	Rabies, from bite of a rabid dog	9 8	The weight of every heart given is that of the organ carefully freed from fat.
10	Saddle and harness; work sometimes very severe, and always irregular	Accident; ran away in harness, and was so injured as to render it necessary to destroy her	9 5	Average weight of all the hearts in this table, including the heart of *Eclipse*, 9 lb. 5 oz.
16	Saddle and harness; sometimes carted; frequently trotted for wagers; labour sometimes very severe	Broken leg; fracture near the hock, from a kick; was destroyed	9 0	
10	Used entirely for harness; let out daily on hire, or used in a cab; labour very irregular, and always severe	Acute inflammation of the heart and acute congestion of the lungs, caused by being put in a cab and galloped for three miles at a very severe pace	8 10	
7	Used both for saddle and harness; sometimes very severe	Fracture of the left hind leg; was destroyed	7 12	

No.	Sex.	Colour.	Breed.	Height.	History of the animal.
				hnds. in.	
15	Horse	Gray or white	Well-bred cob	14 0	Was purchased by last owner at five years old, and in his possession nearly twenty years; was lame occasionally from corns in the fore feet; never was known to be ill; was never bled, nor had a ball given; was noted as a fast trotter, particularly in harness, and scores of times, was driven seventy miles a day (at least so said the owner); six months before death went blind of both eyes.
16	Horse	*Eclipse*, light chestnut or sorrel chestnut, the off hind leg white from the off shank to the foot	Thorough-bred	16 2	"The best horse that ever lived." History furnishes no parallel of such a horse; it is stated on good authority that his utmost speed was never known, as no horse could be found to call forth his extreme pace. "This famous horse was not only the best that ever this country saw as a racer, but he was no less so as a stallion, for his progeny, by their feats on the course in twenty-three years, won 344 races, producing to their owners the extraordinary sum of £158,000, various small sums and forfeits not included." His powers of endurance are so well known that it is useless to comment upon them.

TABLE

N°.	Sex.	Colour.	Breed.	Height, exclusive of the shoes.	History of the animal.
				hnds. in.	
1	Mare	Dark brown	Coach-horse-breed	15 3½	In possession of last owner eight months; never throve well in his hands; was not hardy nor spirited; soon fatigued if worked a little severe. (See Contribution 3, Case 1)
2	Horse	Bay, and black legs	Light draught-breed	15 2	In possession of last owner eighteen months; was subject to severe attacks of colic; was of weak constitutional powers; if exerted beyond a moderate degree he failed in his appetite and required a day or two to recruit his energies. (See Contribution 2, Case 1)

Age at death, at least—	Kind of labour, and duration of ditto.	Cause of death.	Weight of heart.	Additional observations.
Yrs.			lb. oz.	
25	Saddle and harness; when younger was usually severe	Destroyed on account of old age	8 8	The height of every horse is given exclusive of the shoes, except *Eclipse*, and whether the shoes are included in his height or not I cannot tell, nor do I possess any means of ascertaining.
26	A race-horse	Acute disease of the bowels	14 0	The weight of every heart given is that of the organ carefully freed from fat. Average weight of all the hearts in this table, including the heart of *Eclipse*, 9 lb. 5 oz.

No. II.

Age at death.	Kind of labour, and duration of ditto.	Cause of death.	Weight of heart.	Additional observations.
Yrs.			lb. oz.	
Rising 6	Saddle and harness; seldom severe or long continued	Typhoid pneumonia	7 4	Average weight of hearts in this table, 6 lb. 15½ oz.
6	Farm work, principally carting	Congestion of the lungs, cause not obvious	7 5	

No.	Sex.	Colour.	Breed.	Height, exclusive of the shoes.	History of the animal.
				hnds. in.	
3	Horse	Black	Light breed	14 2	In possession of last owner two years; always very quiet; spiritless, and easily fatigued. (See Contribution 4)
4	Mare	Bright bay	Three-parts-bred	16 1	In possession of last owner three years; was never of strong constitution; three years before had a severe attack of pneumonia, the cause of which was not obvious; was also subject to attacks of specific ophthalmia and to grease, also to colic; had also chronic cough; could not endure fatigue or hard labour. (See Contribution 5, Case 2)
5	Horse	Gray	Three-parts-bred	15 3	In possession of last owner about a year; was a bad feeder and a bad thriver; suffered frequently from colic, also from cough; could not endure severe labour or fatigue; was what is denominated a "wasting" horse. (See Contribution 6, Case 1)
6	Mare	Dark bay	Half-bred	15 3	In possession of last owner two years, during which period she suffered several times from colic, catarrh, loss of appetite, and also chronic cough; was of very tender constitution; could not endure fatigue, and if allowed to stand a few hours in the stable the legs commenced swelling. (See Contribution 9, Case 2)
7	Horse	Black	Heavy draught-breed	16 0	In possession of last owner for two years; was of tender constitution; work, even of a moderate kind, would sometimes take away his appetite; once or twice he suffered from colic, and frequently from catarrh; at the time he was purchased by last owner he was affected with chronic cough of a very severe nature, which cough continued till death. (See Contribution 9, Case 4)
8	Mare	Dark bay or brown	Half-bred	16 0	Was in possession of the firm for two years previous to death; had six attacks of colic in the above period a short time before death had pleuritis, and in addition was affected with chronic cough; was also a voracious feeder and a bad thriver; an extra amount of labour produced colic, and afterwards general debility. (See Contribution 9, Case 5)

Age at death.	Kind of labour, and duration of ditto.	Cause of death.	Weight of heart.	Additional observations.
			lb. oz.	
Yrs. 5, within a month or two	Saddle; never worked hard; only carrying a person a few miles about home	Idiopathic phlebitis	5 4	Average weight of hearts in this table, 6 lb. 15½ oz.
6	Saddle and harness; seldom put to any severe labour	Inflammation of the bowels	7 3	
6	Leader in a stage-coach; had to run 6½ miles out and the same distance back five days a week	Acute rheumatism	6 12	
6	Saddle and harness, and was occasionally worked in chains	Purpura hæmorrhagica	7 4	
8	Draught purposes entirely; work regular	Purpura hæmorrhagica	7 12	
6	Saddle and harness; occasionally draught purposes; labour seldom severe, generally regular	Purpura hæmorrhagica	7 0	

From the facts adduced you will perceive the peculiar views which I desire to establish.

I could have brought forward more facts of a precisely similar nature, but I deem these sufficient for the present. The conclusions with regard to this branch of causation which I desire to establish may be stated as follows:

The large and powerful heart causes health, vigour, and power of endurance to the horse.

The small and feeble heart is a most important predisposing cause of disease of a systemic character to the horse.

A powerful heart may be associated with powerful organs locally, in which case we may expect an example of the highest possible kind of health, vigour, and power of endurance, both systemically and locally. (*Eclipse* and others as example.)

A feeble heart may be associated with a powerful organ locally, in which case we may naturally expect a feeble system, and possibly good local health to such local organs as are strong.

A feeble vital endowment of any particular organ will be a cause of disease to such organ.

Lastly, a feeble heart and a feeble organ locally may exist in association, in which case we shall have, in every sense of the word, what is commonly called a weed.

Organic causes of disease, Class 2.—The second class of organic causes relate more especially to the general conformation of the animal; also sex, age, size, and colour. They are a class of causes generally known and pretty well understood, so that my remarks respecting them will be brief.

It is well known, as a rule, that very large-sized horses neither endure fatigue, nor are they so free from disease as smaller-sized horses and horses of more compact build.

Round-boned, gummy-limbed horses are more subject to grease, canker, itchiness of the skin and extremities, swelling of the legs, and various other diseases, than are flat-boned, clean-limbed horses.

Mares are more prone to diseases of a nervous and spasmodic character than geldings, and geldings are more prone than mares to diseases of the larynx, to paralysis of the laryngeal nerves, and to roaring; while, as a balance, as it were, to this, mares are more prone to broken wind and to chronic cough.

White hoofs are more brittle and more liable to sandcrack than hoofs of a dark colour. Light chestnut horses are seldom so vigorous and stolid as bays, browns, and blacks; while gray horses are subject at least to one peculiar disease, which horses of another colour appear exempt from, viz. melanosis. It is important also that the colour of a horse should be clear and definite. A clear bay, or brown, gray, chestnut, or black. Horses of a mixed or indefinite colour are frequently bad in temper and soft in constitution; such as a dirty muddy colour, as though bay and brown were mixed together, as a dirty bay or a dirty brown.

"There are some maladies," says Mr. Dun, "in which it is comparatively easy to trace the connection between conformation and

disease. Thus, bone spavins are most usually seen where there is a disproportion in the size of the limb above and below the hock; curbs where the os calcis is small and the hock straight; strains of the tendons of the fore legs where the limb is round and the tendon and ligaments confined at the knee; and navicular disease where the chest is narrow and the toes turned out. Amongst horses so formed, these diseases are more than usually common."

In remarking upon local peculiarities of conformation as causes of disease, I may also name certain peculiarities in connection with the entire organism; a horse, for example, having a flat form of body, with a wide space between the last rib and the hip, with a body somewhat pendulous, and with length of limb disproportionate to the other parts of the frame—such a horse is sometimes a voracious feeder, and at other times a poor one; also of great laxity of organism, and far more liable to disease of all kinds, especially to acute and chronic maladies of the digestive viscera, than horses which are differently formed.

CHEMICAL CAUSES, giving rise to chemical forms of disease.—Of this I may say we have numerous examples. *Scarlatina* I regard as a chemical disease. A subtle poison, of a kind not always known, invades the body, poisons the blood, and produces a direct disturbance upon the vital endowment of the system.

A second example is the production and formation of the material forming a calculus within the kidneys and the bladder.

A third example is hoven in cattle, the effects of which are pretty well understood by the generality of stock-owners.

A fourth example is glanders. I also suspect that numerous forms of epizootic diseases are purely chemical in their causation and origin, and that the most speedy and effectual way of restoring animals so affected to health will ultimately prove to be by the use of chemical means and chemical agents.

MECHANICAL CAUSES OF DISEASE.—Mechanical causes of disease may be either of a *direct* or *indirect* nature in the production of disease. A nail driven into the sensitive tissues of the foot, the consequences of which are well understood, is an example of a *direct* nature; while, on the other hand, disturbance within the organism of a vital or chemical nature may give rise to mechanical causes, which in turn may produce another series of vital disturbances of a nature entirely different from the first. A horse, for example, may be affected with colic, from which he might easily recover but for a simple and, perhaps, unexpected accident. The pain may be so severe as to cause the patient to plunge about, and, in so doing, the bowels, the stomach, or the diaphragm, may be ruptured, and thus place the animal in a moment beyond every hope of recovery. Instances of this kind are familiar to all. I merely give them to show the singular course of things—the inseparable relation which exists between healthy and diseased action; between health-producing and health-destroying influences, and more especially the way in which disease under peculiar circumstances becomes the further cause of disease.

From the above considerations respecting the causation of disease, we pass to other matters of a different character, but still closely related to the foregoing, amongst which we may especially consider—

1. Sympathy.
2. The periodicity of disease.
3. Association of diseases.
4. Second attacks of diseases of the same character.
5. Diagnosis of disease.

And, lastly, the principles to be pursued in the treatment of disease.

SYMPATHY.—The sympathy manifested by the organism of the horse in disease is a subject of the highest interest to the veterinary surgeon, and yet our numerous writers upon equine maladies have scarcely noticed it. To study it properly, with a view to exhaust the subject, would be to add a new chapter to comparative physiology. Every disease we have to treat presents to our notice illustrations of its influence. I cannot do more upon the present occasion than merely allude to a few of the more obvious facts in relation to it.

The moment that disease of an acute nature becomes established within the organism, either systemically or locally, we behold phenomena in association with it, which accompany the state of the patient, as one friend, so to speak, accompanies another.

The sympathetic symptoms of every disease constitute the majority of the symptoms present. They are NOT the disease, and yet they are inseparable from the disease.

You can no more have a case of pleuritis without alternate heats and chills of the system, without disturbance of the pulse, disturbance of the respiration, anxiety of the countenance, and that mute but suffering appeal of the eye which our patient turns towards us, no more, gentlemen, than you can have a living horse without head and limbs. Everything that pathognomonically belongs to pleuritis is strictly limited to a few inches of space within the chest; the rest is entirely due to that mysterious agency—*Sympathy*.

The heart holds a similar relation to the living system that the hands of a clock hold to the works within; the former *indicates* the state of the living organs related to it; the latter, the state of the dead mechanical ones. "Nature," says Lord Bacon, "has a meaning in everything she does." Gentlemen, in few of her domains will the ardent veterinary student discover more deep and significant truths than in those he will derive by studying the laws of sympathy.

THE PERIODICITY OF PATHOLOGICAL PHENOMENA.—Morbid phenomena are manifested periodically. The pains of colic appear and subside periodically. The excited pulse attendant upon fever is increased towards evening, and subsides towards morning, so long as the disease continues. These and other states of a similar character, easy to particularise, are strictly in accordance with the phenomena manifested by the organism when in health.

The horse eats and drinks periodically, works and rests periodically, both in his system and in the various organs which compose his system.

Towards morning his heart rises in the number and force of its beats, and as evening approaches the same organ diminishes both in the force and in the number of its beats. Everything throughout the vast domain of nature is the same. The Nile overflows periodically. The tides ebb and flow periodically. The motions of the heart and the living forces resident within the organism of the horse, are linked by mysterious laws to the tides of the sea, to the revolutions of the stars, and to the powers of the universe.

The association of diseases.—It is a matter of common occurrence to behold two or more diseases in association, such as grease with disease of the digestive organs, old inveterate skin disease with stomach disease, disease of the stomach with laminitis, ringworm in association with an inveterate cough and with gastric disease, inveterate forms of grease with lymphatitis, strangles with pneumonia, pneumonia with pleuritis, and a number of other affections with which veterinary surgeons of experience are all familiar; still, in all such associations the tissues affected appear to possess relations and sympathies of one common type and to be governed by laws of one common nature. We never behold such diseases in association as laminitis and scarlatina, laminitis and tetanus, tetanus and scarlatina, or acute inflammation of the lungs and laminitis, or acute inflammation of lungs and acute inflammation of the bowels. These latter forms of disease appear incompatible; why they are never seen in association it is impossible, in the present state of our knowledge, to explain.

Second attacks of disease.—This is a question which is worthy of more attention than it appears to have received. Certain peculiar forms of disease are manifested by the same animal repeatedly. Colic is an example; while other diseases, if they are ever manifested, appear to render the animal exempt from all attacks of a like nature.

Whoever heard of the same horse being affected a second time with tetanus, or a second time with scarlatina or purpura, or animals of the bovine class with a second attack of pleuro-pneumonia? Are these exemptions solely a matter of accident? or do they arise from a cause we do not suspect?

The question, gentlemen, is certainly worth your consideration.

Diagnosis of disease.—The diagnosis of disease I consider to some extent a gift. By study and experience it ought to be attained by those who desire to do so; but numbers of practitioners seem incapable of grasping its difficulties. The true key to the art, or the means by which the gift may be perfected or the power acquired, is by the study of the phenomena of sympathy.

Three fourths of the symptoms attendant upon every acute disease consist of sympathetic symptoms; and by separating these from the symptoms *strictly essential* to the malady itself we grasp the particular fact without further trouble.

As a rule, perhaps, the greatest difficulties we have to contend against in diagnosis are with some of the numerous forms of lameness we are occasionally called upon to treat; but common-sense, aided by a few practical rules which seldom or never deceive those who understand them, will generally enable us to detect the nature and seat of the malady.

THE PRINCIPLES TO BE PURSUED IN THE TREATMENT OF DISEASE.—We are brought at last to the consideration of the treatment of disease.

Gentlemen, the proper principles to pursue in the treatment of disease is a very wide and important subject. It is one I could say much upon, but it is impossible I can do justice to it upon the present occasion. I shall therefore close my present essay with as few remarks as possible.

1st. Health and disease are simply states of the organism convertible into each other.

2nd. The laws of disease cannot be understood except by first understanding the laws of health.

3rd. The causes of disease are as much to be sought within as without the organism.

All disease-curing agents are disease-producing agents; consequently, by understanding the special relation which these powers (the powers of disease-curing and disease-producing) bear to each other, we of necessity learn the true nature of the curative power of the agents we employ.

The President expressed, in very lucid and eloquent terms, his admiration of the essay, and hoped the members present would, even although unprepared for so extensive a subject, endeavour to discuss it both freely and fully.

Mr. P. Taylor, President of the Lancashire Veterinary Medical Association, while admiring the ability of the essayist as displayed in the paper just read, objected strongly to the announcing of one subject and then bringing forward another, as members were unprepared to discuss it in the manner which it was desirable at these associations, and he earnestly hoped that this would not be accepted as a precedent.

Mr. Williams, Hon. Sec. to the Yorkshire Veterinary Medical Association, regretted that the essayist had not described more fully the conformation of the animals mentioned in the tables drawn up by him, and stated his belief to be that the weight of the heart had less to do with the length of life in an animal than a well-developed chest, broad loins, and a vigorous nervous system. In his opinion, the heart would soon come to a standstill were it not for the nervous centres.

Mr. Stonar, Chester, doubted the correctness of the inferences arrived at by the essayist, seeing that in one class of animals they had either been killed accidentally or destroyed on account of old age, and consequently they had the whole of the muscular tissue of the heart, as well as the other organs, in a healthy and well-developed state; whereas in Table No. 2 the animals had died

young, and mostly from debilitating disease, in which case the muscular tissue would be loose and flabby, and would, in all probability, weigh less.

Mr. Greaves, Manchester, in common with Mr. Williams, much regretted the course pursued by the essayist in bringing forward a different subject to that announced by him for consideration; for his part, he came prepared to discuss the question of canker, and he had no doubt that other members had done the same, and if they were to be disappointed in this manner the attendance at these useful meetings would in all probability fall off.

On the general question, he differed with the essayist, considering that the vital force lay more in the nervous centres than int he heart.

The following gentlemen also took part in the discussion:—Mr. Cartwright, Mr. Briscoe, Mr. Brydon, Mr. Harwood, and Mr. Walley.

The Essayist having replied to the objections urged by the various speakers, a unanimous vote of thanks was awarded to him for his able paper.

The usual vote of thanks having been awarded to the President for his conduct in the chair, the meeting terminated.

Mr. Harwood will read a paper at the next meeting on "Diseases of the Hock-Joint in the Horse."

GEORGE MORGAN, *Hon. Sec.*

Veterinary Jurisprudence.

EXCHEQUER COURT.

Thursday, June 3rd.

(*Before* Mr. BARON PIGOTT and a Common Jury.)

TAYLOR *v.* HARMAR.

(*Concluded from p.* 546.)

Mr. Wills, in opening the case for the defendant, stated that he would be able to prove that at the time this horse was sold it was in a perfectly sound and healthy state. The jury would have positive evidence laid before them from the most eminent veterinary surgeons, that so far from this horse having suffered from poll evil, it never had had the poll evil at all. The learned counsel believed that even the plaintiff's witnesses had failed to make out a case against his client; but in order that no doubt might remain on their minds, he would place before them the most reliable evidence as to his state before and after the sale, and he should then ask them for a verdict for Mr. Harmar.

Mr. Wm. Harmar, a farmer, living at Calow, near Chesterfield, examined by Mr. Wills, said that he was defendant in the action, and had worked the colt that was the subject of the action

from the time he was about a year and a half old till he was sold. There was nothing the matter with him when he was sold. It was not true that Mr. Dyson had called his attention to a swelling at the back of the horse's head—it was perfect untruth. He received a letter on the 25th February, stating that the horse was not quite right. The 25th February was on a Saturday, and on the next day he and Mr. Martin went over to Moorside farm to see the horse. When he got there he went straight to the horse's head, because his attention had been called to that by the letter. He did not nudge Mr. Martin, nor did Mr. Martin observe that the lump was no bigger. He could not swear that there was any enlargement on the head at all. There was a good deal of hair on the horse, and the hair was all ruffled up. It appeared as though it had been pushed by the fingers into a tuft, but as to any enlargement he could not see any difference on the one side from the other. The first thing that he noticed was his mouth, which made him observe to Mr. Martin that if he had not got the poll evil he had been punished sufficiently to have had it. The mouth was raw on the top, and there were symptoms left of it then. The man in the stable said that the fellows who worked with him had thrashed the horse with a fork shaft. On the 10th March the horse was sold by auction, and a friend of his bought the horse by his direction, and it was removed to the defendant's farm. The horse had never been attended to since the sale, and had been set to work immediately he reached the farm.

Cross-examined.—He never asked any questions of Mr. Martin respecting the horse before he was set to work, but after that Mr. Martin examined him; the horse worked at general farm work.

Mr. Jas. Martin, veterinary surgeon, Chesterfield, stated he had seen the horse the day before the sale, and upon examination he found the horse perfectly sound. There was nothing the matter with the head, knowing very well what cart-horses were subject to. About a month after he again examined the horse and found the mouth very raw on each side. There might have been a little irritation of the skin on the top of the head, but it was scarcely perceptible. Mr. Harmar said that he had received a letter respecting the horse in which poll evil was mentioned, and the witness took particular care to examine the horse with regard to that, but there was not the slightest symptom of poll evil.

Cross-examined by Mr. Karslake, Q.C.—There was a little rubbing of the hair on the top of the horse's head; that was all.

— *Whittaker*, a labourer in the employment of Mr. Harmar, said that he had had the care of the horse up to within a fortnight of the time of the sale. He had taken the horse to the sale, and the horse was perfectly sound. He saw the horse after it came back from the second sale, and it had been put to work at once, and since that time had been worked regularly.

Cross-examined.—There is not a better horse for work on the farm. The horse holds his head up particularly high. He is a good honest horse. The witness ceased to take care of the horse

a fortnight before the sale, because he had left Mr. Harmar's employment.

Mr. Herbert Johnson, examined, said that he was a dealer in horses, and had seen the horse the day before the sale. He was taken with the horse, and offered £36 for him.

Cross-examined.—The witness had been in business ever since he was twelve years of age, and was twenty-two then. He did not bid more than £36 for the horse, because he thought it was not worth more for his business.

John Meakin, examined, stated that he was a dealer in horses, and had seen the colt the day before the Chesterfield fair. He also had made a bid of £36.

Cross-examined.—He saw the horse at Mr. Harmar's house.

Mr. John Johnson said that he was a dealer in horses, and had known the colt ever since it was a foal. The day before the sale he had examined the colt. He had examined the head particularly, and there certainly were not any symptoms of poll evil.

Charles Bean, examined.—Was in Mr. Harmar's employ a fortnight before the sale of the horse. Whittaker took the horse to the fair, and witness attended to the other horses. Up to the time he parted with him there was nothing the matter with the horse. He came back to the farm early in March, and since that time had been worked regularly.

Cross-examined. — He has worked harder than the other two horses. He was bigger and stronger, and so they gave him more to do.

Mr. Henry Rangeley, examined, deposed that he was a colliery proprietor, and also a manufacturer of pig iron. He had given twenty guineas for the colt.

Mr. R. Reynolds stated that he was a veterinary surgeon, and had examined the horse, and found no symptom of poll evil. He would not have the slightest difficulty in discovering whether the horse had ever suffered from that disease.

Mr. Mavor and *Professor Spooner*, of the Veterinary College, London, also gave evidence strongly confirming the evidence of Mr. Reynolds.

Mr. Baron Pigott, in summing up the case to the jury, said the only question was whether the horse was sound on the 26th of January, when it was sold to the plaintiff. It was admitted that the horse was warranted, and therefore no question could arise upon that. If they believed the evidence of the surgeons who had been called for the defendant, and had stated that no symptom of poll evil could be discovered, they would probably think that the horse had received a blow after the sale, and that it was perfectly sound when sold by defendant. If so, they must return a verdict for the defendant.

The *Jury* immediately returned a verdict for the defendant.

Plaintiff's Attorneys—Messrs. Gregory and Rowcliffe, 1, Bedford Row, London.

Defendant's Attorney — Mr. Cutts, Chesterfield. — *Derbyshire Courier.*

GOVERNMENT APPOINTMENTS FOR THE SUPPRESSION OF THE CATTLE PLAGUE.

PRIVY COUNCIL OFFICE; VETERINARY MEDICAL DEPARTMENT.

OFFICER.—Professor J. B. Simonds.

INSPECTORS for London and the Metropolitan Police District:

Professor G. T. Brown, M.R.C.V.S., New Cavendish Street.
Mr. J. Broad, M.R.C.V.S., Paddington.
„ T. P. Boughton, M.R.C.V.S., Hounslow.
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„ H. Priestman, M.R.C.V.S., Caledonian Road.
„ R. Skelton, jun., M.R.C.V.S., Leyton.
„ F. T. Stanley, M.R.C.V.S., Borough.
„ G. Tegg, M.R.C.V.S., Stamford Hill.
„ J. Woodger, jun., M.R.C.V.S., Westbourne Terrace.

In our next issue we hope to give a list of the members of the profession who have been appointed by the magistrates in the petty sessional divisions of the county, and by the mayors and other authorities in the several corporate and other towns.

To make the list as complete as possible, and to separate it from that of those who do not hold Government appointments, but are mercly named as inspectors by mutual insurance societies, boards of guardians, &c., we shall be obliged by early information from each member of the profession as soon as he receives his appointment.

OBITUARY.

WITH sincere regret we record the following, which we extract from a provincial journal. Mr. Fisher we well remember. His diploma bears date April 22nd, 1842. On what a slender thread hangs life!—

DEATH FROM THE BITE OF A FLY.—A melancholy feeling has just been created at Stamford, in consequence of the death of Mr. Samuel Fisher, a veterinary surgeon in that town. A short time ago Mr. Fisher went to examine a horse which had just died, belonging to Mr. Ward, farmer, of Drayton, Northamptonshire. At the time of this inspection the carcase was covered with myriads of flies, which were feeding on the remains. Mr. Fisher, in the course of his examination, saw that two of the insects had settled on one of his arms. He took very little notice of the circumstance, but in a few days two minute lumps presented themselves. He felt no pain until about a week after, when he thought it advisable to call in a medical gentleman. The arm continued to swell, and, notwithstanding the greatest attention of the medical man, death occurred on Tuesday.

THE

VETERINARIAN.

VOL. XXXVIII. No. 454. OCTOBER, 1865. Fourth Series. No. 130.

Communications and Cases.

CATTLE PLAGUE.

During the past month the disease has continued to extend in various parts of the country. The outbreaks in most instances could be traced, and in some few cases they were apparently due, to the purchase of sheep that had been in contact with diseased cattle.

A further cause of alarm arose from the occurrence of a malignant catarrhal disease among sheep, some of which it could be proved had been associated with diseased cattle; what this new affection might portend, how far the "cattle plague" might be transmitted to sheep, whether it would affect them in a modified form, or in the same deadly shape in which it exists in the ox tribe, were agitating questions which are now unhappily set at rest, by evidence which places it beyond doubt that sheep are subject to the malignant disease, and readily succumb to its influence.

Early in the month the report of the "cattle plague" being in Holland was confirmed, and its reimportation from thence to England was first demonstrated in the West Hartlepool case; this, although the first *well-marked* instance, was not *the* first case in reality by many, as will be presently apparent.

OUTBREAK OF THE DISEASE IN HOLLAND.

The facts connected with the occurrence of cattle plague in Holland are very few and simple, and are not denied even by those whose interests are most seriously involved. It happened that during the month of June Mr. Defries, jun., received from his father, in Holland, twenty-three fat oxen for sale in England. The animals were sent to the Metropolitan Market, but the prices offered for them, £13 10*s*. per head, not meeting the views of the seller, they were taken away and again brought and exposed for sale. Thirteen of the oxen were sent into the market three times, on June 22nd, 26th, and 29th. Ten of them were twice sent to market on alternate market-days.

During the intervals the oxen were placed in Mrs. Nicholls' layers and fields. At the time the disease existed on her premises, although unrecognised. In these situations the oxen mixed freely with market-stock, both foreign and English.

The prices offered were not accepted by Mr. Defries, who decided to have the animals returned to Holland. Accordingly they were reshipped at Blackwall, in the "Batavia," on July 22nd.

Mr. Simmonds, the inspector, remarked that the oxen were not in good health, but he had no power to detain them.

On the arrival of the returned cattle to Holland the disease commenced its ravages, and within a few days of their landing twenty-one of their number had been destroyed.

No suspicion being entertained of the true nature of the malady, as a matter of course no precautions were taken to prevent its spread. The authorities, having no intimation of the outbreak, could not act, and thus every circumstance was favorable to the rapid extension of the malady.

When the oxen returned to Mr. Defries they were placed on a marsh adjoining another in which were a number of cattle belonging to Mr. Frank Vanderwalden. To these the "pest" was first communicated; before, however, the fact was known, twenty of the infected animals were sold by Mr. Vanderwalden, and carried the disease to other localities.

Infected animals were during this time being sent to England week by week, buyers and sellers acting in perfect ignorance of the fact that the pest was already in the systems of the cattle in the incubative stage, only waiting the proper moment for its full development. The outbreak of the

disease in Norfolk and Suffolk, from the introduction of Dutch cattle into those counties, was now no longer difficult of explanation.

The disease soon spread to Belgium, and thence to the north of France, and, being known at once, steps were immediately taken to arrest its progress. The measures adopted by France were energetic and complete; and, as will be seen, they are the more likely to be carried out with rigorous exactness, as they are based upon a system of compensation whenever it becomes necessary to destroy infected animals.

MEASURES DIRECTED TO BE ADOPTED BY THE MINISTER OF AGRICULTURE, COMMERCE, AND PUBLIC WORKS, IN THE CIRCULAR ADDRESSED TO PREFECTS OF DEPARTMENTS.

Every owner, holder, or custodian of horned beasts, by whatever right, is to make an immediate declaration to the mayor of the commune, of the diseased, or suspected, animals which he may have at home or in his pastures.

As soon as the mayor is warned, he is to cause the animals whose disease has been notified to him to be visited either by the nearest veterinary surgeon or by the one charged with that duty.

I recommend you to urge upon the mayors of the different communes of your department that this measure of absolute necessity should be stringently carried into effect: it is, besides, prescribed by the regulations on the subject, and any persons contravening it would be liable to severe penalties.*

When, after the report of the veterinary surgeon, it is established that one or more beasts are diseased, the mayor will take scrupulous care that they are separated from others, and do not communicate, directly or indirectly, with any animal of the commune. The owners are not, under any pretext whatever, to take them to public commons or watering places, and are to feed them in secluded places.

This separation of the diseased beasts cannot be practised too strictly; it is upon it that the safety of the other beasts of the district depend, and the mayors, by enforcing the strict observance of the rule, may do the greatest service to their fellow-countrymen. It is necessary, then, that they should be sufficiently convinced of the importance of their duties, not to be content with half-measures.

Every day, the mayor of the commune, where the disease has shown itself, is to address to you a detailed report, in which he will set forth the names of the owners whose cattle are infected, and the

* Parliamentary Order, 24th March, 1745. Order of the Council, 19th July, 1746. Order of the Council, 16th July, 1784. Decree of the Constituent Assembly, 6th October, 1791. Decision of the Executive Directory, 27th Thessidor, in the year X. Royal Ordinance of 15th January, 1815. Penal Code, Art. 459.

number of diseased beasts.* As soon as the mayor has received proof that the epizootic has declared itself in his commune, he is to notify the fact to all the cattle-owners of the said commune by a placard posted on the places where the acts of the public authority are placed; which placard shall enjoin such owners to declare to the communal authority the number of horned beasts in their possession, describing their age, height, colour, &c.

A copy of this declaration is to be sent to you, and you will take care to forward it to this department.†

The return is necessary for the superior authority to be able to render an account of the losses, and to estimate the indemnity to be allotted to those who have suffered them.

As soon as the epizootic has declared itself in a district, no animal, not even those which are still healthy, in the commune, can be taken away from it to be driven to fairs and markets, or even to the premises of private individuals in neighbouring communes, as their migration may bear the contagion to a distance. All communication between cattle of infected and uninfected districts is to be absolutely prevented. Visits should now and then be made, consequently, to cattle proprietors in the infected communes, to ensure that no animal has been removed.‡

If, in contempt of these provisions, a diseased or suspected animal in an infected locality were taken to a market or a fair, or even to the home of a private person, in a district free from infection, the offender would be liable to the penalties imposed by the articles of the penal code which apply to this subject.

Owners who cause these animals, when diseased or suspected, to be driven by their servants or other persons, to markets or fairs, or to the premises of private individuals in an uninfected district, are responsible for the acts of such drovers.§

Owners of healthy beasts may, nevertheless, in infected districts, have them killed at home, or sell them to the butchers of their communes, under the following conditions:

1. The veterinary surgeon appointed by the authority must have declared that the beasts may be consumed as food without danger.
2. The butcher must kill the beasts within twenty-four hours.
3. The owner cannot give up possession of them, nor the butcher kill them, till he has received the written permission of the mayor, who shall mention it in his report.
4. The butcher must not, under any pretext, sell on his own account, and as live stock, beasts bought by him for immediate slaughter.

Every offence in this respect shall be punished conformably to

* Order of the Council, 1746. Decree of the Constituent Assembly, 1791. Penal Code, Art. 460.

† Order of the Council of 19th July, 1746. Decision of the Executive Directory of 27th Thessidor, in the year V.

‡ Order of the Council of 24th March, 1745. Order of the Executive Directory of 27th Thessidor, in the year V.

§ Order of the Council of 7th July, 1746. Penal Code, Article 460.

the laws and regulations on the matter. The owner and the butcher are jointly and severally liable.*

Experience having shown that dogs may become mediums for the transmission of contagions, they should be obliged to be tied up, in infected districts; and the destruction of those found at large is ordered (Law of 19th July, 1791; Decree of Executive Directory of 27th Thessidor, in the year V).

If, on the first appearance of the epizootic in the district, the municipal authority should deem it necessary, in order to stifle out the disease before it has spread, to cause the immediate slaughter of the diseased cattle and of those which have been stalled with them, this measure may be adopted, care being taken to state, in an official report, the number and the value of the animals so slaughtered.

Healthy beasts, killed to prevent their receiving the germs of contagion, may, of course, be used for food like those slaughtered in an ordinary way.

Extracts from the reports of slaughtering must be sent to me, so that my department may pay the owners the compensation to which the law entitles them.

Beasts which have died from the epizootic, or the destruction of which has been ordered in consequence of the seriousness of their disease, are to be buried at a distance as great as possible from dwellings, at a depth of at least six and a half feet in heavy land, and still deeper in very light land. The grave is to be covered with all the earth taken out of it.

It would be a good precaution, if possible, to first throw on the carcases a layer of quicklime.

The skins are to be slashed before the body is buried, to destroy their commercial value, so that no one may be tempted to disinter them. The carcases are not to be dragged to the place of burial, lest they should leave on the ground substances containing the seeds of contagion. They are to be carried in carts, drawn by horses, asses, or mules, and these carts are to be forthwith copiously washed after having been used for this purpose.

In districts where there are knackers' yards or boilers in which animal matter is manufactured into articles of commerce, the owners are at liberty, instead of having the carcases buried, to allow them to be used by such establishments, provided that the distance to them from their property is such that the bodies of the dead animals are not obliged to traverse uninfected districts.

Manure coming from infected stalls is to be buried.

It must not be forgotten that the forage on which sick animals have breathed and thrown their foam, and the litter which has been soiled with their droppings, may be the agents of transmitting contagion: both should be treated like the manure after the death of the beast which has used them; in such a case, ill-judged economy may cause fresh losses.

* Order of the Council of 19th July, 1746. Decision of Executive Directory of 27th Thessidor, in the year V.

Stalls which have been occupied by sick beasts should be purified with the greatest care, the prescriptions of professional men being observed. Thorough washing with liquids, whose disinfectant properties are recognised (such as chloride of lime, chlorinated lime-water, solution of carbolic acid, lye-water), scraping of racks and mangers, and covering them with a coat of tar; turning up the ground and laying down sand, earth, or plaster on the soil which forms it; chlorinated fumigations—all these are means, the efficacy of which has been proved by experience, and which ought to be scrupulously recommended to owners of infected stalls, who should be thoroughly convinced that the expense which they may incur in purifying their stalls will be amply repaid them by the benefit which they will derive from so doing.

Even after the adoption of these precautions it will be prudent not to introduce healthy beasts into the infected stalls till after at least a fortnight has elapsed, during which the latter have been left exposed to the wind.

Articles which have been used for diseased animals should be destroyed by fire, if of small value (as, for example, halters), or purified by suitable means of disinfection.

Such are the different measures which appear to me requisite in order to hinder the extension of the epizootic in your department, if it should penetrate there. I cannot impress upon you too strongly the necessity of taking care that they are everywhere applied scrupulously and strictly. If our endeavours are well organized, if every one is at his post and does his duty, it may be possible to oppose to the incursion of the evil a rampart which it will not surmount.

In addition, you will find good auxiliaries for the application of all the means adapted to combat the epizootic, in veterinary societies, consultative chambers of agriculture, agricultural associations, and the veterinary surgeons of your department. The decree of the 18th October, 1848, has constituted, ready to your hand, a local council of public health and salubrity, one of the functions of which relates to epizootics and the diseases of cattle. But it appears to me that it would be of great use if, to supply the present need, special commissioners, composed principally of veterinary surgeons and agriculturists, were established wherever the want were felt, having for their object the more perfect adjustment to local conditions of the measures of sanitary police required by the epizootic.

I wish you to keep me informed, by very frequent communications, of all the facts relative to the epizootic which may be brought to light in your department.

If circumstances require it, I shall transmit to you instructions supplementary to those which form the subject of the present circular.

I am, &c.,

(Signed) Armand Béhic,
Minister of Agriculture, Commerce,
and Public Works.

All these regulations, be it observed, are instituted upon the presumption of the spread of the malady through the medium of contagion. The idea of the spontaneous origin of the "plague" in our country is ridiculed by all who understand the question at all. The inquiry put to a foreigner excites a derisive laugh, as though the argument deserved no serious consideration.

There is, doubtless, much difficulty in proving, to demonstration, that the disease always extends in obedience to the law of contagion; but if direct evidence can be brought to show that in every case the introduction of diseased animals among healthy ones has been invariably followed by the outbreak of the malady among the previously healthy stock, a positive fact is established. The other fact, of an outbreak occurring where no direct contact can be proved or traced, is purely negative, and in no way invalidates the conclusion that may be logically drawn from the positive.

The proofs of the contagious character of a disease being complete, there exists no necessity for speculation upon other possible modes of extension; and the defenders of the theory of spontaneous origin should be prepared at least to show that the disease has been most rife in those situations where hygienic laws have been least obeyed.

Obeying the impulse which, like a vast wave, is agitating all classes of society, corporate bodies—scientific, economic, or social—are taking action; questions of cure, or prevention, are being discussed; sanatoriums are advocated or condemned; and far and wide is spreading the craving desire that something should be done.

Sanatoriums are the "El Dorados" of those who have no experience of the medical treatment of the plague, and who cannot realise the idea of its incurability, and who, in their well meant but mischievous zeal, would do a positive evil in the hope to obtain doubtful good. The arguments for sanatoriums are included in the enumeration of the advantages to be gained by collecting animals together in properly conducted receptacles, in order that scientific men may test the efficacy of remedial measures. The arguments against them are contained in the subjoined report adopted by the Privy Council.

REPORT UPON THE ESTABLISHMENT OF SANATORIUMS.

VETERINARY DEPARTMENT,
23, NEW STREET, SPRING GARDENS;
September 8th, 1865.

To the Clerk of the Council.

SIR,—With reference to the copy of the opinion of the Metropolitan Cattle Plague Committee relative to the establishment of sanatoriums for diseased cattle, and also a copy of the report of the Committee appointed at a public meeting of cowkeepers, &c., bearing on the same subject, which have been forwarded to me for reporting thereon, I beg to inform you that I have fully considered the subject, and now forward to you a report of the opinion at which I have arrived.

In the first place, I would, however, remark that the way in which the Metropolitan Cattle Plague Committee has used my name in the memorial would lead to the inference that I was in favour of establishing sanatoriums, whereas at every meeting of the Committee I spoke against the proposition, and on a division taking place voted with the minority against it.

Throughout their memorial the Metropolitan Committee seemed to have based their arguments in favour of such establishments, rather on the provisions of the Order of Council of the 11th August, 1865, than of those of the order of August 26; thus we find them objecting to the keeping of infected animals in a confined space, whereas by the latter order power is given to the inspector to seize and to slaughter or cause to be slaughtered and buried in any convenient place any animal suffering from the plague.

The establishment of sanatoriums, on a scale contemplated by the Metropolitan Committee. I regard as perfectly impracticable, and not only so, but if founded they would be one of the greatest evils possible to conceive, by tending to perpetuate and keep alive the contagion on which cattle plague depends.

Day and night plague carts would be traversing the streets, and day and night the seeds of the disease would be disseminated far and wide. No precaution which could be taken in the continuous removal of diseased animals could guard against this.

Another of the arguments used by the Committee is based on the supposition that the plague is a curable disease, than which nothing can be more fallacious.

The experience already gained in this country fully confirms that of Europe as a whole, viz., whenever the plague

breaks from its stronghold in Russia and invades other countries, medical skill is powerless in arresting its progress by the application of curative measures.

The only result obtained in England by the adoption of such means, as well as elsewhere, is that of prolonging for a time the life of the pest-stricken animal, which, however, when practically considered in reference to the extermination of the disease, is a thing to be regretted, as the danger of spreading the disease, is thereby immensely increased, for from the moment of the attack to the death of the animal pestiferous exhalations are continuously being sent forth from its body.

One other and a most important objection to the establishment of sanatoriums in London is that of leading to the founding of them in every great town in the kingdom, and even in rural districts, a measure which may be said to convert England into one great pest-house, and as assuredly lead to the destruction of the whole of her cattle.

The policy of every country has ever been to rid itself of this death-producing and infectious disease as quickly as possible, by sacrificing the few that the many may be saved, and the soundness of this policy is shown by the whole of Europe, westward of a line drawn from Memel on the Baltic to Trieste on the Gulf of Venice, having been preserved from any serious outbreak of the disease for a period of nearly forty years. With reference to the proposed establishment of a temporary hospital at Fulham, as advocated by the meeting of cowkeepers, dairymen, and others, held at St. Paul's National School Room, Hammersmith, it may be said that the general question has been already disposed of in this report; but it may, nevertheless, be well to add that, at the Royal Veterinary College, where, from the beginning of the visitation up to the present time, infected animals have been admitted, the united skill of the medical and veterinary professions has signally failed in curing the disease. A result of this kind cannot justify the founding of a second similar institution, even for temporary purposes, be it on a smaller or larger scale. In concluding this report I would remark that if the Orders in Council are faithfully and regularly enforced, especially with regard to the killing and burying of infected animals within the sphere of action of the Metropolitan Cattle Plague Committee, and if compensation to a fixed amount be given to all cowkeepers who are obliged to slaughter their animals, the greatest possible good will arise. Many men will thereby be saved from impending ruin, and the country secured from further loss through

diseased animals being surreptitiously removed as now from the cowshed to the cattle market.

Besides these advantages, the withholding of information relative to the appearance of the disease among the animals, which is now complained of, would leave no pretext for existence.

I am, Sir,
Your most obedient servant,
JAMES B. SIMONDS.

The Royal Agricultural Society, acting in the interests of stockowners, have published a circular drawing special attention to the measures that are recommended to prevent the extension of the disease, and calling upon the community to assist in carrying out the intentions of the Government. In order to assist them in so doing, the symptoms of the cattle plague are detailed and compared with the other two diseases with which it might be confounded—"pleuro-pneumonia" and "eczema."

CIRCULAR OF THE ROYAL AGRICULTURAL SOCIETY.

The gradual extension of the cattle plague in different parts of the country, together with its appearance in localities hitherto exempt from it, induces the veterinary committee of the Royal Agricultural Society to call upon its members to co-operate with the Government, and with other agricultural societies, in the efforts which are being made for suppressing the disease.

The existence of this disease being regarded as a national calamity, it was right that the Government should take the initiative in adopting means for its suppression; and their having done so leaves little for the Royal, or any other Agricultural Society, to do, except to second the efforts of the Government.

The several Orders in Council which have been put forth, well calculated as they are to arrest the progress of the malady, will, nevertheless, prove non-effective to a considerable extent unless they are backed by individual exertion. One of the chief and in many instances the only cause of the extension of the disease into several fresh districts has been the reckless manner that many persons have dealt with infected cattle. Not only have these been driven from place to place, and turned into fields separated only from large herds of healthy animals by an ordinary fence, but many

have been sent to fairs and markets; and thus, by commingling with others, have spread the disease far and wide. All preventive measures are thus rendered of little avail, and unless practices of this kind are prevented by the vigilance of agriculturists and others, thousands of cattle will be lost to the country, in addition to those which have already perished. Every one should be impressed with the fact that the disease is the most infectious as well as the most fatal which is known to affect cattle, akin in its deadly effects to the smallpox of sheep, but not giving warning to persons by an eruption upon the body. Like smallpox of sheep, also, the poison lies latent in the system for several days after being inhaled, and during this time the animal gives no indications of being affected, so that the most cautious persons may be deceived in the making of purchases. Another fact of equal importance, but not generally known, is that the special poisonous material, or infectious matter, on which the disease depends for its existence, is multiplied to an extent scarcely to be estimated in the system of every fresh victim; so that it is quite possible for one diseased animal to be ultimately the cause of the death of thousands. The veterinary committee conceive, therefore, that the precautions which have been put forth by the Society's veterinary inspector will not be inaptly repeated here, although they have been previously brought to the notice of the members of the Society through the ordinary channels of publication.

These precautions are:

1. That all persons should abstain as much as possible from the purchase of "store stock" in fairs and markets, and should not purchase from cattle-dealers without a warranty against the disease.

2. That all newly purchased cattle of every kind be kept apart from others for a period of not less than twelve to fourteen days.

3. That cattle, the subjects of this disease, should not be allowed to remain in any meadow or pasture field, unless they can be perfectly isolated from all other animals, as well as kept at a distance of not less than a hundred yards from all roads along which sound cattle may be driven.

4. That every animal, which is violently attacked with the disease, be killed and buried without delay, and that the skin be placed in some disinfecting fluid before being sent off the premises.

5. That no animals be allowed to go near to the burial places, until several weeks have elapsed.

6. That no person, who has the charge of the sick cattle, be allowed to go near the healthy ones, and that all indirect communication by dogs, or other animals, between the infected and the healthy cattle, be strictly prevented.

7. That all healthy cattle after removal from the diseased be well washed and cleansed.

8. That no fodder or straw, which has been used about infected cattle, be taken to other animals, or even thrown into the fold-yard, or upon the manure heap, until it has been first well incorporated with chloride of lime, or some other disinfecting powder. When practicable it is desirable that all such fodder and straw should be burnt.

9. That all manure in the sheds or stables occupied by diseased cattle be daily sprinkled with some disinfecting powder, and that no evacuations of the diseased be removed without being first disinfected.

10. That all sheds and stables in which diseased cattle have been located be thoroughly washed, cleansed, and ventilated, and likewise disinfected by whitewashings with quicklime, before any other cattle are placed therein.

11. That all railway cattle-trucks, station-pounds, ships used in the cattle trade, wharves and other places where cattle are brought together, be kept as clean as possible by frequent washings; and that disinfectants be used whenever there is reason to believe that they have been occupied by diseased animals.

12. That no store-stock, milking cows, or cattle of any kind which have been exposed to the influence of the infection, by being located with the diseased, be sent to any fair, or market, in less time than a month after such exposure.

13. That in all cases in which it is determined to slaughter animals which have been on a farm or premises where the disease has broken out, but which animals are believed at the time to be healthy and fit for human food, they be sent with all due care and caution direct to the nearest slaughter-house, if not killed on the premises, and as a further precaution their skins be placed in some disinfecting fluid.

14. That, although experience has shown all animals of the ox tribe, whatever may be their age, sex or condition, to be susceptible of the action of the infection, it is nevertheless essentially necessary that every cause which tends to weaken the constitution should be carefully avoided. Protection from inclement weather, supplying animals with nutritious food, such as cake or corn, and especially with pure water, are imperatively demanded at a juncture like the present.

In addition to a strict observance of these precautions, the committee would remind the members of the necessity of recognising the early symptoms of the disease, and not confounding them with those belonging to other maladies common to cattle. For this purpose they here insert the leading symptoms of the cattle plague, and of the two other epidemic affections to which cattle are subject:

The Cattle Plague.

The early symptoms of the plague are usually a *remarkably dull and dispirited condition* of the animal, which will stand with its head hanging down, ears drawn back, and coat staring, refusing all food, and occasionally shivering. The eyes have an unusual expression of anxiety, and a mucous discharge flows from them, and also from the nostrils. The skin is hot, but sometimes chilly; the temperature varying from time to time. The extremities are cold; the breathing short and quick, and frequently accompanied with moaning as an indication of pain. The inner part of the upper lip and roof of the mouth is reddened, and often covered with raw-looking spots. The bowels are occasionally constipated; but, in most instances, diarrhœa soon sets in, the evacuations being slimy and very frequently of a dirty yellow colour. The vagina is often intensely reddened. The prostration of strength is great, the animal staggering when made to move. *In milch cows the secretion of milk is rapidly diminished, and soon ceases altogether.*

Pleuro-pneumonia, or Lung Disease.

The attack is mostly insidious, the animal appearing at the outset to be but little affected. The eyes retain their brightness, often to the termination of the illness. The appetite is generally diminished, but rarely lost, excepting in the advanced stages of the disease. A short, dry, husky cough is one of the earliest symptoms; it continues throughout, and is easily excited by moving the animal, especially if such movement is sudden. There is rarely any discharge from either the eyes or nostrils. The breathing is greatly increased, and becomes painful as the disease advances. A dull sound is emitted on gently percussing the side of the chest over the diseased lung. Firm pressure applied to this part will also cause the animal to shrink. There is little or no alteration in the fæcal evacuations, excepting in the last stages of the malady, when a diarrhœa comes on. The warmth of the body and the extremities is often retained to the last hours of the illness. In milch cows the quantity of milk is lessened; but the animal will frequently yield a fair amount to the very last. The affected animal will sometimes live for weeks.

The Mouth and Foot Disease.

Attack sudden. No premonitory symptoms, excepting in very rare instances. The animal frequently smacks its lips, and shows by the movements of its tongue that the mouth is the seat of suffering. The saliva flows freely from the mouth, and accumulates also as a frothy fluid around the muzzle. An examination of the mouth shows the existence of large blisters on the tongue, and often on the inner part of the upper lip. They are few in number, and always white in colour. The animal seldom refuses food, but rolls it about in its mouth, and often drops instead of swallowing it.

There is little or no disturbance of either the breathing or pulse, nor is the temperature of the body altered. The evacuations are also natural. In many instances the feet are affected as well as the mouth, and blisters will form between the toes, causing the animal to walk tenderly, and frequently to catch up one foot after the other and shake it, as if to dislodge something which was producing pain. In milch cows the teats are occasionally affected with blisters, especially at opening of the milk-duct, which lead on in this situation to sores and crusts, and prevent the ready flow of the milk. The disease is of short duration, rarely produces death, and frequently exists simultaneously among the sheep, pigs, and poultry of the farm, as well as among the cattle.

The preceding description of the most prominent symptoms of these several affections will, the committee hope, so far guide the agriculturist that he may at once be enabled to decide on the nature of the disease; but in any case in which a doubt may exist he should lose no time in calling to his assistance the professional aid of a veterinary surgeon.

The committee would further observe that they have witnessed with satisfaction the formation of mutual protection or compensating societies in some of the counties in which the disease has broken out. Such societies must prove important auxiliaries to the means employed for suppressing the disease, by inducing persons to give immediate notice of its appearance, and by doing all they can to carry out the rules and regulations herein named, as well as the several Orders in Council which have been issued by the Government.

In conclusion, the committee have to state that, although strongly believing that it is to preventive and not curative means the country must look for the extermination of the cattle plague, they have not neglected the important subject of combating the disease by medical treatment. In conjunction with the Royal Veterinary College, measures have been adopted by which diseased cattle are admitted into the infirmary of that institution for treatment. Hitherto, the results of medical treatment have nowhere been so satisfactory as could be wished; but should a successful mode of treatment be discovered the same will immediately be made public. Another and a very great advantage arising out of diseased cattle being brought to the College is, that means are afforded to veterinary surgeons—who arrive in London from all parts of the country, and even from foreign states—of seeing the disease in its several stages, and also of being present at *post-mortem* examinations, and learning from the

professors the whole of the details of the treatment which has been adopted.

The particulars relating to the outbreak of the malignant disease among sheep are contained in the report annexed. The evidence is of such a nature as to leave no room for doubt that sheep are subject to the disease, and can communicate it to oxen with which they may be brought in contact.

REPORT ON A DISEASE AMONG SHEEP IDENTICAL WITH "CATTLE PLAGUE."

VETERINARY DEPARTMENT,
23, NEW STREET, SPRING GARDENS;
September 25th, 1864.

To the Clerk of the Council.

SIR,—I beg to report that, acting on the instructions received from you, to investigate without loss of time the statement received at your office relative to an outbreak of the cattle plague in a remote part of the county of Norfolk, supposed to have arisen from cattle having been in contact *with some diseased sheep* recently brought to the premises, I have visited the district in question, and inquired into all the circumstances of the case.

It appears that as far back as the 17th of August, Mr. C. Temple, farmer and merchant, of Blakeney, received on his farm 120 lambs, which he had instructed a dealer to procure for him for feeding purposes. The lambs were bought at Thetford Fair on the preceding day, and were immediately sent by rail to Fakenham, from which place they were driven to Blakeney, a distance of about ten miles. On their arrival they appeared to be fatigued to a greater extent than ordinary, which was, however, attributed to the heat of the weather and the exertion the animals had undergone. In addition to this the shepherd observed that several of them seemed unwell, and he remarked to his master that they did not appear to be "a very healthy lot," and that he thought it would be better to return them to the dealer. Within a day or two of this time the symptoms of illness were more marked in all the original cases, and many more of the animals had been attacked. On the 24th two of the worst cases were removed from the field to the farm premises, and were placed in a shed for treatment, in which afterwards a cow was put. On the 25th two of the lambs died, and, in consequence of this and of the large number which were now affected, the whole were brought on the morning of the 27th into the

same yard where the shed, previously alluded to, is situated. There is also another shed, separated from this yard only by some old furze faggots, into which the cows were driven night and morning for being milked. The lambs remained in the yard till the morning of the 28th, when, having had some medicine administered to them, they were returned to the field, and never came again near the cows. While in the yard three died, two on the 27th and one on the 28th; and, on the following day, two others died in the field. From this time the disease went on, so that by Friday last, September 22nd, the day of my visit, forty-six had either died or been killed, and twenty-seven were in a very precarious condition. On September 7th, ten days after the last exposure to the sheep, a cow gave evidence of being affected with the cattle plague, this animal being the one which had been put into the shed occupied by the diseased sheep on the 24th August. A second cow was attacked on September 11th, and a third shortly afterwards, which was followed by others, so that by the 16th all the cows—six in number—a heifer, and a calf, were all dead. My examination of the lambs showed that they were unmistakably the subjects of the plague. The symptoms agreed in almost every particular with those observed in cattle affected with the malady, and the *post-mortem* appearances were also identical.

With a view to ascertain the true nature of the changes produced in the system prior to death, I had four of the lambs killed, and from these I took some diseased parts, and forwarded them to the Royal Veterinary College without note or comment. These parts were examined by my colleague Mr. Varnell, who at once recognised the special changes of structure which are caused by the cattle plague.

The whole facts of the case leave not the least doubt of sheep being liable to the disease termed the cattle plague, and that when affected they can easily communicate the malady to the ox tribe; and, moreover, that when so conveyed it proves equally as destructive as when propagated from ox to ox in the ordinary manner. The case is also more important from having occurred in a place no less than fourteen miles distant from any other where the cattle plague exists, thus placing beyond a doubt the fact of the malady being introduced among the cattle by the sheep alone.

I regret to add that this is not a solitary case of sheep being affected by the cattle plague. I learned that some sheep were supposed to be similarly affected belonging to Mr. R. J. H. Harvey, M.P., on his estate at Crown Point, near Norwich. This place I also visited, and found a large

flock of upwards of 2000 lambs, among which the malady was prevailing. A large number had been separated from the diseased, and gave no evidence of the malady. Very many, however, had died; and the disease was making rapid progress. I also examined many of the dead, and found the *post-mortem* appearances to be identical with those seen in the other cases spoken of in this report. In this instance the malady was brought into the estate by the purchase of some cattle which afterwards died from the disease, and which were unfortunately pastured with the sheep at the time the disease manifested itself.

The whole matter is one of the greatest importance, and which I lose no time in submitting to you, for the information of the Lords of the Council.

I have the honour to be, Sir,

Your most obedient servant,

JAS. B. SIMONDS.

In consequence of the intelligence communicated to the Council Office, important alterations were immediately made in the existing orders, and for the information of the profession the amended and consolidated order is subjoined.

WHITEHALL; *Sept. 22nd*, 1865.

An important Order in Council was agreed to at a Council Chamber, held at Whitehall, the 22nd day of September, 1865, by the Lords of Her Majesty's Most Honorable Privy Council. After the ordinary preamble, the Order continues:

And whereas a contagious or infectious disorder now prevails among the cattle of Great Britain, which is generally designated the "cattle plague," and may be recognised by the following symptoms: "Great depression of the vital powers; frequent shivering; staggering gait; cold extremities; quick and short breathing; drooping head; reddened eyes, with a discharge from them, and also from the nostrils, of a mucous nature; raw-looking places on the inner side of the lips and roof of the mouth; diarrhœa or dysenteric purging:"

And whereas several Orders, dated respectively the 24th of July, the 11th, 18th, and 26th of August, 1865, have been made under the authority of the said Acts by the Lords of Her Majesty's Privy Council, with a view to check the spreading of the said disorder:

And whereas it is expedient to consolidate and amend the said Orders:

Now, therefore, the Lords of Her Majesty's Privy Council do

hereby, by virtue of and in exercise of the powers given by the said Act, so continued as aforesaid, order as follows:

1. This Order shall extend to all parts of Great Britain.

2. The said Orders, dated respectively the 24th of July, the 11th, 18th, and 26th of August, 1865, are revoked, with the exception of so much of the said Order of the 24th of July, 1865, as empowers the Clerk of Her Majesty's Privy Council to appoint inspectors within the limits of the metropolitan police district, provided that such revocation shall not affect any appointment made, or any act done, or penalty recoverable, under any Order hereby revoked.

3. In this Order the word "animal" shall mean any cow, heifer, bull, bullock, ox, calf, sheep, lamb, goat, or swine; and the word "inspector" shall include any inspector appointed under this Order, or under any of the said revoked Orders.

4. Whenever the local authority, as hereinafter defined, shall be satisfied of the existence of the said disorder in, or have reason to apprehend its approach to, the district over which his or their jurisdiction extends, it shall be lawful for such local authority, if he or they shall think fit, from time to time to appoint one or more veterinary surgeon or surgeons, or other duly qualified person or persons, to be an inspector or inspectors, for the purpose of carrying into effect the rules and regulations made by this Order, within the district for which he or they shall have been appointed. And the same authority may, from time to time, revoke such appointment.

5. Subject to the powers herein reserved to the Clerk of Her Majesty's Privy Council, the local authority within the City of London, and the liberties thereof, shall be the Lord Mayor; in any municipal borough in England or Wales, the mayor; in any petty sessional division in England or Wales (exclusive so far as relates to the jurisdiction of the inspector of so much of the said division as lies within the limits of a municipal borough for which an inspector has been appointed) the justices acting in and for such petty sessional division. The local authority in any burgh or town in Scotland which is subject to the jurisdiction of a provost or other principal magistrate, shall be the provost or such principal magistrate; and in any other place in Scotland not within the jurisdiction of such provost or other principal magistrate, the justices of the county in sessions assembled.

6. Every inspector shall from time to time report to the local authority by which he is appointed the steps taken by him for carrying into effect the regulations prescribed by this Order; and the local authority shall certify, in such manner as may be directed by one of Her Majesty's principal Secretaries of State, the number of days that such inspector has actually been engaged in the performance of his duty, and the number of miles travelled by him while thus engaged.

7. Every inspector shall furnish the Lords of the Council with such information in regard to the said disorder as their lordships may from time to time require.

8. Every person having in his possession, or under his custody, any animal labouring under the said disorder, shall forthwith give notice thereof to the inspector of the district within which such person resides, or, if no inspector shall have been appointed for the district within which such person resides, then to the officers hereinafter named, according to the place of residence of the person obliged to give notice; that is to say, within the metropolitan police district, to the said Clerk of the Privy Council; within the City of London, and the liberties thereof, to the Lord Mayor; within any other borough, burgh, or town subject to the jurisdiction of a mayor, provost, or other principal magistrate, to such mayor, provost, or other principal magistrate; elsewhere in England, to the clerk of the justices acting in and for the petty sessional division; and elsewhere in Scotland, to the clerk of the peace for the county.

9. Every inspector shall have power to enter upon and inspect any premises or place in which any animal or animals may be found within the district for which he is appointed, and to examine and inspect, whenever and wherever he may deem it necessary, any animal within such district.

10. Every inspector shall have power within his district to seize and slaughter, or cause to be seized and slaughtered, and to be buried as hereinafter directed, in any convenient place, any animal labouring under the said disorder.

11. Every inspector shall have power within his district to cause to be cleansed and disinfected, in any manner which he may think proper, any premises in which animals labouring under the said disorder have been, or may be, and to cause to be disinfected, and, if necessary, destroyed, any fodder, manure, or refuse matter which he may deem likely to propagate the said disorder. And every owner or occupier of such premises shall obey any order given by such inspector for that purpose.

12. Every inspector shall have power within his district to direct that any animal which he suspects to be labouring under the said disorder shall be kept separate from animals free from the said disorder. And every person having in his possession, or under his custody, such animal, shall obey any order given by such inspector for that purpose.

13. Every person having in his possession, or under his custody, any animal labouring under the said disorder, shall, as far as practicable, keep such animal separate from all other animals, and shall not, if the animal be within a district for which an inspector has been appointed, remove the same from his land or premises, without the license of the inspector.

14. No person shall send or bring to any fair or market, or expose for sale, or send or carry by any railway, or by any ship or vessel coastwise, or place upon, or drive along, any highway or the sides thereof, any animal labouring under the said disorder.

15. No person in any district for which an inspector has been appointed shall, without the license of the inspector, send or bring to or from market, or remove from his land or premises, any animal

which has been in the same shed or stable, or has been in the same herd or flock, or has been in contact, with any animal labouring under the said disorder.

16. No person shall place or keep any animal labouring under the said disorder in any common or unenclosed land, or, if the animal be in any district for which an inspector has been appointed, in any field or pasture, where, in the judgment of the inspector, such animal may be likely to propagate the said disorder.

17. All animals having died of the said disorder, or having been slaughtered on account thereof, shall be buried with their skins, and with a sufficient quantity of quicklime, or other disinfectant, as soon as practicable, and shall be covered with at least five feet of earth, or shall, in districts for which an inspector has been appointed, with the consent of the owner, be otherwise disposed of, in manner directed by the inspector.

18. During the continuance of the "cattle plague" within the said City of London, or that part of the metropolitan police district which is under the jurisdiction of the Metropolitan Board of Works, no animal shall be brought or sent to the Metropolitan Cattle Market, or any other market within the said city or the said part of the metropolitan police district, except for the purpose of being there sold for immediate slaughtering; and every such animal, as soon as sold, shall be marked for slaughter in the manner in which cattle are ordinarily marked for slaughter in the Metropolitan Cattle Market.

19. Whenever any local authority as hereinbefore defined declares, by notice published in any newspaper circulating within his or their jurisdiction, that it is expedient that animals, as hereinbefore defined, or some specified description thereof, shall be excluded from any specified market or fair within that jurisdiction for a time to be specified in such notice it is hereby ordered that after the publication of such notice it shall not be lawful for any person to bring or send such animals or description thereof into such market or fair; provided always that this clause of this Order shall not, unless renewed by a further Order, be in force after the expiration of three calendar months from the date of this Order.

20. Every person offending against this Order shall, in pursuance of the said Act, for every such offence forfeit any sum not exceeding £20 which the justices before whom he or she shall be convicted of such offence may think fit to impose.

(Signed) ARTHUR HELPS.

A FEW THOUGHTS ON INFLUENZA IN HORSES.

By Professor Varnell, Royal Veterinary College.

(*Continued from* p. 567.)

With reference to the pulmonary complications of influenza, I have thought that I could recognise three distinct forms, with their intermediate phases, each of which would, as might be expected, vary. They have been somewhat as follows:

First, partial or total stagnation of the blood in the vessels of the lungs, with, as a result, sero-sanguineous effusions into the interlobular tissue, followed by death.

Second, stagnation of the blood in the vessels, in certain parts of the lungs only, thus allowing a sufficient amount of the unaffected lung tissue to carry on the function of respiration, but for a time only, as the congested parts will most likely result in the formation of abscesses which eventually destroy the horse. This process may, or may not, be a slow one, as many circumstances may arise either to retard or hasten it. For instance, the amount of lung tissue destroyed, the quantity of purulent matter formed, the probability of its being discharged into the bronchia—thus causing death by suffocation—and the chance of the pus being conveyed into the circulation and producing a fresh train of symptoms eventually ending in death.

Third, as stated in the preceding pages, the relaxed state of the coats of the blood-vessels of the pulmonary tissue, the tardy circulation of the blood as a consequence, and the actual stagnation of the blood in parts of the lungs, followed by effusion into the interlobular tissue, with partial or complete consolidation of these organs. These phenomena, with the intermediate stages of disease, produce those structural alterations in the lungs which in a variable length of time are sure to terminate unfavorably.

It is by no means uncommon in influenza for the pleura, either of itself or in connection with the substance of the lungs, to be diseased. It is, however, more frequently the former, but in either case it is of that *asthenic* character which is so characteristic of this disease in all its stages. It is to this circumstance that this form of pleurisy is so difficult to diagnose, as compared with that of a more *sthenic* kind. For example, the pain is not so acute, nor does the cough give the idea of so much suffering, although it may be as frequent; in fact, none of the symptoms of pleurisy, when

complicated with influenza, are so sharply defined as they are in cases of a more *sthenic* character. The effusion into the chest is sometimes considerable, and takes place early after the disease is established. But its occurrence is not marked, as a rule, by any very sudden change in the symptoms; in fact, the symptoms themselves are, if I may be allowed to use the expression, *asthenic*.

Although, as just stated, the effusion into the chest is sometimes copious, it is from the first more or less turbid (at least I have found it to be so); and although the amount of lymph-like matter adhering to the surface of the lungs and walls of the chest is often extensive, yet it is generally of a soft, friable, *aplastic* nature; and we seldom meet with those firm adhesive bands that we do in pleurisy unassociated with influenza, or some allied zymotic affection. Many instances have occurred of horses having died from influenza, and in which *post-mortem* examinations were made, where no one organ was found to have been particularly affected more than another; nor were the structural lesions anywhere apparently sufficient to account for death. Yet, after having carefully examined the tissues, and the secretions generally, the inference was that the functions of those organs essential to life ceased through a non-supply of normal stimuli. The muscular tissue will be found to be pale and flabby, the liver soft and easily broken down; the brain, spinal cord, and nervous ganglia, will have a dirty dull aspect, which is the case with the tissues and organs generally, and which, to my mind, are strong evidence of deteriorated blood being the cause of suspended function. This condition of the tissues is very likely to be overlooked, and wrong inferences drawn therefrom as to the precise cause of death. Such instances as these go very far to prove that the blood, primarily, was unfit to support life. It seems, also, to prove that the nerve centres had suddenly become incapable of generating a proper amount of nerve force, or of receiving impressions; and perhaps the nerve-fibres themselves had also become in a degree unable to conduct stimuli to and from the several centres, and thus the functions of the organs they control become suspended, and the animal in consequence ceased to live.

Such are some of the lesions observed by me in making a *post-mortem* examination of several horses. I shall have to refer to others before closing these remarks.

Horses that are recovering from influenza are often attacked with an affection analogous to, if not identical with, a disease in the human subject termed *urticaria*. This disease of the skin frequently, as is well known, takes place suddenly,

and sometimes it as quickly disappears. It consists in the skin being partially or wholly covered with little flattened lumps, which in some places may coalesce with each other so as to form continuous ridges, or wheals. *Urticaria*, if I may so call it, most frequently takes place on the neck, shoulders, thighs, and flanks; occasionally, however, it appears all over the body. In some instances it assumes a chronic form, when an exudation on the surface of these raised lumps will take place, and in a short time the cuticle desquamates, leaving as many small bare spots.

Much might be said on the pathology of this affection of the skin, but it would not throw much light on that of influenza; I therefore will allude to another result of this disease, namely, *rheumatism*.

This disease, like the one just referred to, usually occurs when a recovery from influenza has just taken place. It may attack only one limb of the horse, or, it may be, two become implicated. In some cases it goes the round of all the limbs, affecting likewise other parts of the body, more particularly the *bursæ* and *ligamentous* tissue. It is usually attended with great pain; and should it continue very long, permanent blemishes, and perhaps lameness, may be the result. This, however, very much depends upon the age and temperament of the horse affected. I will venture to assert that such affections are much more common in the well-bred than in the lower breed of horses. Why this is so, I offer no opinion.

Another very important, and by no means an uncommon, result of influenza is defective or impaired respiration, to express the character of which, the terms *whistling* and *roaring* are often used. A chronic cough also may accompany these, or it may exist independently of them. Each of these affections are important; the two former especially so, and that in many points of view; while much scientific research might be well spent in elucidating their cause and pathology.

These results may be only temporary, but they are far more likely to be permanent; not, however, to such an extent as to wholly incapacitate the horse from work, yet sufficient to render his respiratory organs more susceptible of fresh attacks of disease, and his money value necessarily will be very much reduced. These are important considerations; and, in addition to our attempts to save the life of the horse, we should endeavour as much as possible to prevent the occurrence of the results above alluded to.

I have endeavoured to show the causes that give rise to a train of symptoms which collectively constitute influenza, and also to point out some of the results; but the precise

nature of the morbid material, or how it gets into the system, or how it acts so as to produce the symptoms we have described, still remains to us a mystery, and I fear will ever continue so.

Few diseases of this class are treated upon rational principles; still, to do so ought to be our aim, even though we may not be able fully to accomplish our object. In most instances it is common to do this or that, or to give this or that medicine, often, I believe, because we have heard of this or that being beneficial, or have ourselves thought it might be so, without at all understanding the why or the wherefore. This cannot be rational practice, and yet it is the one most commonly resorted to; and many persons will say, although it is true empiricism, it is nevertheless the safest plan to adopt. Perhaps such a procedure might be the most prudent one; still I cannot but think that we should strive to comprehend the *modus operandi* of the medicinal agent we give, and also the influence that abnormal function may have in changing, or modifying, or altogether retarding its action. But what, to my mind, is of greater importance, and should be well considered, is whether or not it is likely to interfere with nature's processes in the cure of the disease. We ought also to ascertain, as far as possible, how far medicine can be made use of to assist nature in throwing off from the system the morbid material which is believed to be the cause of the disease; and further, to what extent nature, unaided by medicine, is capable of restoring health. These considerations ought not to be lost sight of in discussing the course we should pursue in the treatment of this disease. Let us briefly consider these points. In the first place, in reference to the action of the medicines often given in this affection: for instance, their effects may not be those we could desire; they may be in excess, or the reverse, or they may produce actions we did not expect or wish for; and even should the case progress favorably, we are by no means sure it is due to the medicine we have been administering. In the next place, the action of the agent taken into the system may modify, or retard, or altogether arrest Nature's processes; which I have no doubt is very often the case, since Nature often works a cure in spite of our interference with her; still, we are very reluctant to give her the credit of so doing.

I will venture to assert that there is scarcely a veterinary surgeon of any experience who has not been called upon to treat cases which, prior to his being sent for, had not been under the care of some farrier, or meddling groom, who knew nothing of the disease he was treating, and was alto-

gether unable to distinguish one common affection from another; and yet he had been giving his nostrums by wholesale; and should the animal die, a *post-mortem* examination would reveal lesions produced by the medicines which are much more likely to have been the cause of death than the disease the horse was primarily affected with. On the other hand, should the animal live, his recovery, in all probability, is due to Nature's efforts, and not to the absurd treatment he was subjected to; nevertheless, the escape from death may have been a very narrow one. Such men as those I am referring to will bleed, simply because the horse was ill; or purge, or rowell, or seton, as may be, and repeat these again and again without having any other reason for so doing than that they had heard horses had been so treated for some disease or other; or that their forefathers, or some one they once knew, or had heard of, had done the same before. But what is most remarkable is, that the employers of these charlatans seem to be as ignorant as the charlatans themselves, and will tell you that the doctor had been very attentive, had given plenty of medicine, and in short he had done all that could have been done, and therefore is perfectly free from blame.

Formerly, I have no doubt, more instances of this kind could have been cited than at the present time, but such quacks are not yet rooted out; far from it, nor will the educated veterinary surgeon succeed in doing this until the public are sufficiently enlightened so as to be able to judge between science and pure *empiricism*.

I have just returned from a visit to the Isle of Wight, on which beautiful island there is but one veterinary surgeon. This gentleman informed me that the island was overrun with quacks, of *both sexes*, for he said that women were in great repute there in the treatment of diseases of animals. In some instances, where the cattle plague had broken out on the island, women were allowed to treat the animals affected; and he had no doubt they were the cause, but to what extent he could not say, of the disease spreading. This we can readily understand might have been the case, the importance of the disease not being appreciated, nor its contagious nature understood.

In the treatment of influenza our object, as with that of any other affection, should be, after having duly considered the pathology of the particular case under notice, and the circumstances which might influence the recovery, to consider how far Nature, if entirely left to herself, is capable of effecting a cure; and, in the next place, whether we can

assist her in removing from the system that which we have supposed to be inimical to health, and which was primarily the cause of the illness in the animal. Further, in addition to Nature and Art, the latter being medicinally considered, the advantages to be derived from improved sanitary measures are not to be lost sight of. I am supposing that the horse we are treating is more or less in a position unfavorable to a recovery; it consequently behoves us to remove all obstacles that might impede Nature in her restorative processes, and to see that our patient has all the advantages that we can suggest.

I have, when pondering on the treatment I should pursue in this, and indeed all other diseases, often wondered how far Nature was capable of restoring health without any artificial aid whatever, and how far her powers by medicinal interference may be weakened. Many practitioners appear to be very sanguine respecting the great benefits to be derived from the use of medicine; so much so, indeed, that they seem almost to ignore the natural powers of the body to throw off disease, even when placed under the most favorable circumstances. I am not here alluding to the farrier or cow-leech, many of whom are so entirely ignorant of the nature of disease that I have no hesitation in saying that very great losses are sustained by their interference; but I have reference to some of the members of our own profession. For my part, I have so much faith in the natural powers of the body to remove or get rid of the morbid material which interferes with normal function, that I have almost thought it presumptuous on my part to interfere at all, except it be in a sanitary point of view.

Reflecting, however, as far as I am able, on the action of medicines when taken into the body, and the effects I have observed from them, I am forced to the conclusion that a judicious selection and use of medicinal agents can often assist Nature in removing diseases, and accomplish this more surely and effectually, than if left wholly to herself.

The question, then, which suggests itself is, upon what principles are we to attempt this artificial assistance, and upon what grounds can it be discussed? I think the nature of the disease, its complications—previously alluded to, and its tendency to assume a low typhoid character, at once indicate the principles upon which we should base our treatment. Theoretical considerations convince me that our great aim should be to support the horse until the morbid material, whatever it may be, is excreted from the system. In the next place, to anticipate, through the nature of the

disease, what symptoms will arise during its advance, and to direct our curative means to the neutralization of their causes, with a view thereby to lessening the intensity of their effects; for it appears to me that if we wait for fully developed symptoms to present themselves before we apply our remedies, we shall, as far as art is concerned, always be a day's march behindhand. The nervous system will have felt the effects of the poison in the blood to such an extent that our remedies will have lost much of their power. These few remarks will, I think, suggest a rational mode of treatment, which, of course, must be modified according to circumstances; and, in addition, I shall only give a short idea of the plan I have pursued in reference to this disease, leaving the treatment of the intervening phases to be comprehended by deductions drawn therefrom, as it was not my intention to allude to all the details when I commenced this paper.

As I have before stated, I believe in the existence of a poison in the blood in the disease, which primarily and particularly affects the nerve centres; and to effect a cure, this must be got out of the system as quickly as possible. The question then that arises is, how is this object to be attained, and the horse's health restored to its pristine state, without any structural lesion being left which might deteriorate his value or usefulness?

As primarily indicated, I have thought it prudent not wholly to trust to Nature in the cure of this disease, although I have had ample proof, in many instances, that she is quite able to restore health without the aid of medicine; therefore I consider the means best calculated to accomplish our object are, first, and most important, to see that the horse affected is placed, as soon as possible, in a well-ventilated stable, through which a current of air freely passes. Secondly, to ascertain that the stable is perfectly clean, the drains being thoroughly washed out once a day, some disinfectant used, and a supply of fresh bedding ready for use. Thirdly, water should always be in his box, and within his reach; but it should be removed, if not consumed, at least three times in the day, and fresh put in its place. Fourthly, his clothing, whether much or little, should be taken off twice in the day, as should also his bandages, if any are needed, which is not always the case. If convenient, an occasional change from one loose box to another will be found beneficial. Good stable management is of more importance than is generally supposed, or by the owners of horses believed in, hence the difficulty on the part of the veterinary surgeon in getting it carried out. Next, with reference to the diet suitable for a

horse labouring under influenza. As might be expected, from the nature of the disease, the horse invariably has but little appetite; and at times, during the early and middle stages of the malady, he cannot be made to take any food whatever; still, I make it a rule to offer him some, as his inclination to take some of it or not affords much information as to the intensity of the disease, and also the changes, beneficial or otherwise, that are taking place; a desire to eat is one of the strongest proofs of returning health, and the utter loathing of it is quite the reverse. I think it a good plan to offer the horse a handful of hay, damped with very weak salt and water, three or four times in the day, and as often put before him some cold bran-mash, either of which, if not eaten in a very short time, should be removed; but, as before stated, water should always be left with him.

When the horse is found to be recovering, and is disposed to eat, I would allow him scalded beans and oats, or malt, and a small quantity of sweet hay; if in the summer, some green food, or if the winter, carrots instead.

From the remarks I have already made, the reader will have anticipated the nature of the medical treatment adopted by me in influenza; and whatever may be the opinions of others respecting it, the small per-centage of loss of cases that have come under my notice is sufficient to induce me to continue it, modifying it, of course, according to circumstances.

I have not found it necessary to draw blood; and, although I have generally seen the necessity to excite the bowels into increased action, yet I have always avoided drastic purgatives for this purpose, especially aloes. Saline agents, such, for instance, as Magnesia Sulph., I have given in doses of from ʒiss to ʒij. Also the Liquor Ammonia Acet. in quantities from ʒiss to ʒij; and, should there have been much fever, I have added from ʒss to ʒj of Antim. Tart. dissolved in Aquæ Oiss. In some cases I have found it necessary to give, instead of the Antim. Tart., Spt. Æther. Nitric. from ʒj to ʒij; while in other instances I found it desirable to add, in either case, ʒij Potassæ Nitras, giving two or three draughts at intervals of about twelve hours. Such agents generally produce the desired effect upon the bowels, they also act slightly upon the kidneys, and if the body and legs are well clothed, the secretion of the skin is evidently excited.

These functions being restored, general improvement, as a rule, takes place. If the liver is sluggish, which in the early stages of the disease is often the case, I have preceded the saline draughts by giving calomel in ʒss doses, which seldom requires

to be repeated more than twice, perhaps only once. Enemas of tepid water only, if needed, must not be omitted; and occasionally I have found it necessary to give about ʒvj of castor-oil, which I have found to produce the desired action. I prefer castor-oil to that of linseed, although I am aware the latter is more commonly used in veterinary practice than the former; but I have reason to know that linseed-oil is much adulterated by that which is extracted from seeds having a very acrid character, and through which I feel persuaded that so much irritation of the bowels is set up as produces superpurgation, and in many instances death.

In *laryngeal*, *tracheal*, and *bronchial* complications, attended with soreness of throat and much cough, I cause the horse to inhale the vapour of warm water, and apply irritants to the skin over the region involved, from which I think a two-fold benefit is derived, if properly managed; for, in addition to the effects they produce on the skin, which is intended to be counter to that of the mucous membrane, they act as a general stimulant to the system, provided always that their action is not too intense nor too long continued. If the legs are cold, friction, and perhaps some stimulating liniment well rubbed in, with woollen bandages subsequently applied, will generally restore them to their natural temperature. If there are indications of pleurisy, requiring counter-irritants, I usually apply a mixture of mustard and ammonia, which I take care to have removed with a sponge and warm water after its action has ceased, which generally is severe, and lasts about ten minutes. In this way of managing irritants to the skin, we often produce the desired effect without losing any hair, while the debility and the pain produced by long-continued powerful irritants are avoided.

As the fever subsides, medicine in most cases may be withdrawn, except should the appetite be fastidious, and debility remain longer than is thought safe, when I lose no time in ordering stimulants and tonics. If the mouth is clean, and in other respects there is no indication of fever being present, I prescribe powdered gentian root given in ale twice in the day, with a little sulphate of iron once in the day. The amount, however, of these agents, and the frequency with which they are to be repeated, must be regulated by circumstances.

In protracted cases, if associated with hepatic complications, I have given the nitro-muriatic acid diluted, combined with Tinctura Cinchonæ, not omitting the ale.

When rheumatism supervenes I have administered Potass. Bicarb. in ʒij doses, twice in the day, and Nitrat. Pot. ʒij,

once a day, in his water. If the bursæ are very painful I apply some sedative poultice to the part; and in chronic cases I have blistered, with good results. But in spite of all we can do, rheumatism sometimes remains for months, to the great annoyance both of the owner and practitioner. Often, when the more urgent symptoms of influenza have passed away, a troublesome cough remains, which occasionally is associated with defective respiration. Such cases demand our strictest attention, and even then permanent defects sometimes remain. To remove these defects various means have been resorted to. Irritants have been applied to the skin over the supposed seat of the disease, and the benefits I have witnessed from this procedure have been varied. In chronic cases of cough I have found good result from a seton placed between the branches of the lower jaw, also from irritants applied to the skin. A seton has this advantage over blisters—its action can be kept up for almost an indefinite length of time, and that without the danger of leaving a blemish; a result which sometimes follows the frequent application of blisters.

The actual cautery has been recommended by some veterinary surgeons of great experience in chronic cases of defective breathing. I have known it to be tried, but without any beneficial effect. In the early stages of whistling, resulting from sore throat, I can conceive that it might be of some service, but whether it would be more so than other irritants I cannot say; possibly it might, as its action is more intense.

Such is an outline of the treatment I have had recourse to during the period the foregoing remarks refer to. There are, of course, many phases of the disease which require to be well considered, and the treatment to be modified accordingly. In some cases it will be necessary to have recourse to the use of active means, while in others no medicine will really be required. As a rule, it may be said that everything which tends to debilitate the horse should be avoided.

In concluding these few remarks on influenza, I cannot resist this opportunity of insisting upon the necessity of the most rigid sanitary measures being enforced; for, although an ignorance of the essential cause of this disease may prevent our guarding against its occasional occurrence, nevertheless its severity may, I have no doubt, be much mitigated by their adoption.

PRESENT AND PAST STATE OF THE ROYAL VETERINARY COLLEGE.

By "Veritas."

Dear Sirs,—It is now twenty years since I graduated at the Royal Veterinary College, Camden Town, under the able instruction of the present principal; since which time I have seen but little of "Alma Mater." Being desirous of learning the symptoms, &c., of the cattle plague, I proceeded to the College a few days ago, and was much pleased to find such improvements made in the College arrangements. It may be gratifying to some members of the "body corporate" (who are my seniors) to know that the College of '65, at St. Pancras, is not that of '35, so far as the arrangements of the building are concerned. Instead of the students making their entry into the long stable, next the groom's room, Professor Varnell may be occasionally seen there writing some important document which is to decide the question of soundness or otherwise. The dissecting-room and laboratory are likewise two much-to-be-thought-of improvements.

The tier of horse-boxes, where the paddock was, tends to prove, I think, that the College is increasing its customers, if I may be permitted to use a "shop term." The dog-kennel also was much wanted, and so were a few boxes for the bovine and ovine tribe, all of which are now to be found there. Indeed, I don't know that much could be added to render the infirmary complete. But I almost forgot to mention the change made near where the late Professor Sewell resided. The loose boxes are converted into a reading-room and other offices, if I mistake not, for the students, and a board-room, so that the professors of the College at Camden Town may now congratulate themselves on having most of that which is required to enable them, in *every sense of the word*, to bring out first-class men as veterinary surgeons. It may not, perhaps, be taken by them as complimentary to read this notice of one's old "workhouse."

Believe me, &c.,

Veritas.

To the Editors of the 'Veterinarian.'

FORMATION OF A VETERINARY MUTUAL DEFENCE SOCIETY.

In accordance with a proposition made at the meeting of the Liverpool Veterinary Medical Association, in May last, the following representatives of their several associations met on the afternoon of the 6th September, at the Queen's Hotel, Manchester, for the purpose of forming a *Society for Mutual Defence* against unjust actions at law for alleged malpractice, or occasional accidents during operations, which will at times occur despite every care and precaution.

Liverpool Veterinary Medical Association—Robert Lucas, Esq., *President;* John Ellis, Esq.; Mr. George Morgan, *Hon. Sec.*

Lancashire Veterinary Medical Association—P. Taylor, Esq., *President;* Thomas Greaves, Esq.; John Lawson, sen., Esq.; C. Simpson, Esq.

Yorkshire Veterinary Medical Association—E. C. Dray, Esq., *President;* Charles Secker, Esq.; William Williams, Esq., *Hon. Sec.*

Mr. P. Taylor having been called on to preside, he explained the objects of the meeting, and in very forcible terms urged on the gentlemen present the desirability of forming such a society.

A number of propositions were then made by Mr. Lucas and Mr. Greaves, respecting the scope and objects of the society; and during the discussion which followed, Mr. Dray said that the tendency of the society, as proposed, seemed to him to be rather a defence of those who kept forges than of those who really practised veterinary medicine and surgery.

To this Mr. Lawson replied that statistics proved the contrary, as the recorded actions at law for accidents in shoeing were few in comparison of those for alleged malpractice.

A code of rules and regulations having been agreed to, the following gentlemen were elected officers for the first year:

Robert Lucas, Esq., *President.*
Thomas Greaves, Esq., *Vice-President.*
Charles Secker, Esq., *Treasurer.*
George Morgan, Esq., *Hon. Sec.*

In order to give stability to the society, it is desirable that gentlemen intending to join should do so at once, which they can do by enrolling their names with the secretary, and

paying their entrance fee, which is receivable for a limited time, after which they can only be admitted by election.

All graduates of a recognised college are eligible to become members.

A copy of the rules and regulations will be forwarded to any gentleman on application to the Hon. Sec., George Morgan, V. S., Upper William Street, Liverpool.

OBSERVATIONS AND REFLECTIONS ON THE CAUSE, NATURE, AND TREATMENT OF THE CATTLE PLAGUE.

By First-class Veterinary-Surgeon, W. C. Lord,
Cavalry Depôt, Canterbury.

During the last two or three months the all-engrossing topic of conversation, and theme for public letter writing, has been the cattle plague, steppe murrain, or rinderpest; its origin, pathology, and treatment; and few subjects have ever led to more diversity of opinion without arriving at some conclusion, or even proposing some plausible theory to account for the phenomena presented to our notice in this extraordinary disease. Owing to this want of unanimity and success in our treatment, we find persons without the slightest pretension to scientific knowledge setting themselves up as authorities, usurping the place of the veterinary surgeon, and trying to lower the latter in the estimation of the public; but they have had only a short-lived triumph, for the profession, though taken by surprise at first, and led into an ambush by listening to the timorous counsel of foreign authorities, advising the murder of the innocents without treatment of any kind, have at length come forth to assert their just prerogative of curing; and with such men as Professors Simonds, Dick, and Gamgee, as their generals, and science as their sword, they will, I hope, soon show the world that the British veterinary surgeon is not afraid to encounter any enemy in the form of disease, be it rinder- or any other pest.

The phenomena to which I would direct the attention of the reader are—

1st. How are we to account for the fact that no such disorder has appeared in this country for upwards of a century,

and that it has never been known in any part of Europe to the west of Russia, except as an imported disease?

2nd. It is generally believed to have arrived in a cargo of 320 beasts, which landed in Hull on the 29th of May, of which 175 were brought to London. Why did not the remaining 145, which were sold in and about Hull, show any symptoms of the disease; which I don't believe they have up to the present time?

3rd. Why has this disease resisted all ordinary means to cure it?

4th. Foreign cattle, although showing no symptoms of the disease, and even sheep, are believed to be capable of carrying the infection to other animals. Now, how could one animal give another a disease which it is certain the sheep, at least, never had?

Although the theory which I am about to advance will explain all these hitherto inexplicable problems, I do not consider my proofs (for want of opportunity) sufficient to warrant me in saying that I am right, *ergo*, every one else wrong; but I merely put it before the reader as a matter *adhuc sub judice*, only requesting that any one who may object to it will advance some other theory to account for the phenomena that I have mentioned; and which, I think, can only be explained by referring the origin of the disease to protozoa, either monads or vibriones, both of which I have seen with a good microscope in the evacuations of an animal affected with rinderpest. It has therefore occurred to me, that these might have been imported, but as long as the animal remained in health no ill effects would ensue—the vital powers being able to resist their action—but should these same animals be exposed to any influence of a depressing nature, such as exposure to very great heat—as at Islington market, to insufficiency of food or water, to low marshy pasturage, to noxious exhalations, or some peculiar state of the atmosphere which, under ordinary circumstances, would set up fever, or disease of a simple character, they (the animals infested with these parasites) would get gastro-enteritic fever of a typhoid character, the symptoms and pathology of which I will briefly explain. First, we have fever, and consequent alterations in the secretions of the alimentary canal, characterised by a shivering and then a hot fit, as also by increased, small pulse, and hurried respiration; the bowels either constipated, or the fæces voided frequently, but in small quantities; loss of appetite and rumination, with sudden drying up of the milk; the eyes are either dull, watery, and sunk in their orbits, or have a fixed, staring gaze, and I have seen the lids swollen

and the lining membrane yellow with a muco-purulent discharge; the head and neck are outstretched, and the animal is unwilling to move, as though suffering from headache.

This constitutional disturbance, I imagine, causes a corresponding one in the protozoa, whose chief abode is in the intestines, whose lining membrane they now irritate, and this irritation speedily extends to the pneumogastric nerve, which sends off branches to the air-passages and bronchial tubes, as well as to the digestive organs, and the consequences are such as we might naturally expect, namely, diarrhœa, soon followed by dysentery; respiration increased, and in the latter stages accompanied by a moan or grunt; cold extremities; foul tongue, with increased saliva; sores on inside of mouth; nasal discharge; fetid breath; interlobular emphysema of lungs, and other symptoms which may be attributed to loss of power in the great organic nervous system, such as atrophy of the heart; typhoid fever, fetid evacuations and eructations, sometimes extravasation of air or gas into the cellular tissue over the back and loins, coldness of the whole surface of the body, with trembling or twitching of the muscles, and great prostration of strength.

Let us now analyse these symptoms and complications, and trace them to their fountain head. First we have fever, which appears to be of an ordinary, low type, and its first effect is an alteration of the alimentary secretions; and on the same principle that such an alteration would cause disturbance among entozoa, without which they would be harmless, as is now acknowledged by some of our best authors, this alteration in the secretions causes a commotion among the protozoa, which speedily sets up irritation in the pneumogastric nerve, as I have already stated; the consequences of which are a determination of blood to the mucous membrane of the intestines, and a perversion of the secretions; and these becoming altered in quantity and quality produce diarrhœa and dysentery.

With respect to the respiration (particularly in the latter stages) there is something very peculiar in the grunt which accompanies it, and the breathing so loud (although the respiration is not deep) that it might lead one not accustomed to the disease to suppose he had a case of pleuro-pneumonia to deal with; and yet we find the lungs after death very little if at all diseased, with the exception of interlobular emphysema and slight inflammation in the lining membrane of the bronchii. How, then, are we to account for this phenomenon? Some will say it is a mere expression of abdominal pain, which I believe to be true in some cases. Others believe it

to proceed from the inflammation in the larynx and trachea; but I do not think either of these sufficient to account for it, and my idea is that it must be attributed to a narrowing of the glottis or of the bronchial tubes, from the irritability in the branches of the pneumogastric nerve; similar symptoms having resulted from galvanization of the nerve by Claude Bernard, as well as I can remember. And as I have detected interlobular effusion before the fever became typhoid, I account for it by some of the cells being ruptured from spasmodic constriction in the bronchii; which constriction also prevents the blood becoming properly oxygenized, and the consequence is that the cerebrum and cerebellum become deranged. The latter may account for the staggering gait apparent so early in the disorder, which does not appear to be true paralysis, but seems to depend upon a derangement in the co-ordinating functions which many physiologists ascribe to the cerebellum. The blood will also become altered in quality, in consequence of the faulty action of those organs whose office it is to eliminate from it certain matters, such as urea, bile, carbonic acid, &c., whose accumulation in the blood must prove detrimental; besides, the various secretions that are principally dependent on the healthy state of the pneumogastric nerve, such as the gastric and pancreatic juices, may be so altered as to prevent the regeneration of the blood with healthy chyle, and the natural consequence is loss of power in the great organic nervous system, and those complications which I have already described.

Space will not permit me to enter as fully as I could wish into the pathology of this disease, and in thus curtailing it I have left unnoticed many points of great interest, whilst those which I have mentioned, and the theory advanced in explanation, requires extracts from various authors to bear it out. These I must reserve for a future occasion, and now proceed to consider the practical bearing of the question, and to examine the action of the drugs which have proved most successful in curing the disease or removing its cause. The best of these appears to be Condy's crimson fluid. Why? I answer, because it is an antiparasitic—*vide* label on each bottle—"a simple and certain means of detecting organic impurities in air or water," and again, of "removing taint from meat," which Pasteur and Lemaire have clearly shown depends upon minute organized beings,* and that many so-

* Dr. Roth 'On Ferments,' says, "The three periods, fermentation, eremacausis, and putrefaction are conditions of the development and multiplication of organic beings."

called antiseptics owe their power to physiological rather than chemical action. On the same principle we must also explain the action of phenic acid, both of which should be given as an injection in water as well as in a drench, for these parasites are principally lodged in the large intestines. Professor Dick has cured some cases, commencing with oil (an antiseptic), and followed it up with sulphate of iron, morning and evening. Now, with respect to the latter, we can only judge of its action by analogy, namely, that it is one of the best remedies for worms, and if it has the power of removing entozoa we may expect it to have a similar action on protozoa. But what makes it doubly valuable in this disease is that it not only attacks the predisposing as well as one of the exciting causes, but also the effect; namely, the derangement in the digestive organs, and consequent loss of power in the nervous system. Another valuable remedy, which may be given alternately with either phenic acid or Condy's crimson fluid, is the liquor arsenicalis. It should be given frequently, but in small doses, for it is a well-known fact that arsenic, in large doses, depresses the vital powers, irritates the lining membrane of the intestines, and sets up symptoms similar to those which we find in this disease; but in small doses it allays the irritability, and acts as a tonic. When there is much difficulty in breathing, belladonna will also be found serviceable, given alternately with an anti-parasitic remedy. This difficulty of breathing, I have already remarked, seems to me to depend upon irritability of the pneumogastric nerve, which Valentin galvanized, and found contraction of the trachea and bronchial tubes as the result; but on administering large doses of belladonna these tubes were found lax, and refused to contract under the strongest stimuli.

I must here remark, that I do not consider the protozoa as disease, but merely as an exciting cause, which must be got rid of; and although, if this is done early the effect may speedily subside, yet such treatment cannot always be depended on; but the disease itself, as derangement in the nervous system, should be attacked with appropriate remedies, selected on scientific principles.

It may possibly be questioned my having seen these protozoa, therefore I have taken the precaution to show them to an experienced physician of this city, who is ready to attest my statement. It may also be said that such minute beings could not possibly set up such a disease, but I reply, in the words of Lamarck—the celebrated French naturalist—"We cease to think thus, when we consider that it is with the

smallest objects that nature produces the most imposing and remarkable phenomena." And again, he says, "All that nature appears to lose on one side in volume, she regains on the other in the number of individuals, which she multiplies to infinity." I think the parasitic theory alone will explain how animals brought from Russia may remain well for an indefinite time, if not exposed to any influence of a depressing nature; and also how the same animals (although apparently well), and even sheep, may give the disease to others, which could not be the case if it were like any other disorder. It also explains why animals at a considerable distance from those infected may have the protozoa conveyed to them in the atmosphere, and thus become diseased.

On the 14th August I laid before the Lords of the Council a plan and details for the establishment of hospitals in various districts, which I hope we shall soon see carried out in every part of England, and attended by all veterinary surgeons (gratuitously) who may wish to advance the cause of science; for at present the power of killing conferred on the inspectors will, I fear, prevent any other veterinary surgeon in the same district from taking a case in hand, as he well knows the former may walk in at any moment and order the animal to be destroyed, even if at the time convalescent.

I should mention that I found the protozoa—vibrios, monads, and sarcinæ, in the fluid contained in the small as well as the large intestines, which is considered unusual by naturalists. I may also add, that so prevalent were protozoa in the characteristic rice-water evacuations of cholera patients in 1854, that Dr. Roth says many physicians ascribed the disease to their presence.

MODE OF SACCHARIZING GRAIN.

By J. Seaman, M.R.C.V.S., Saffron Walden.

Since my letter in The *Veterinarian* for July last appeared, many persons have written to me asking for information as to the manner of saccharizing grain. To those gentlemen I beg to apologise for not answering their letters; but when I assure them that if I were to answer all letters containing a similar inquiry, I should keep a clerk constantly employed, I hope to be forgiven. Perhaps the following will suffice as an answer, while it will make known a fact with

which every veterinary surgeon and stock master should be acquainted.

I would first observe that a malt-kiln is not required, neither does it appear that grain prepared as by me recommended is subject to the law of excise.

Winter Saccharization of Wheat.

Steep the grain for forty-eight hours, remove from macerating tub, drain off all loose water, and spread twelve inches deep in a heating box, and cover with cloths, avoiding all lower currents of air. Heat being generated, which occurs in about twenty-four hours, and a smell similar to fresh-drawn cider given off, are guides favorable to the process (diastase generating, and a sprout about to form). A putrid sour smell is to be strictly avoided, as a fungus will be the result of this change, and one end of the grain found brown-black in colour. Immediately a sprout is seen outside the grain, turn the germinating heap into box No. 4, and spread six inches deep; turn from box No. 4 to No. 5, and so on every twenty-four hours, and the process will be finished in from ten to twelve days. The grain of 1864 required as many as eighteen days to effect the desired change.

Summer Saccharization of Wheat.

Steep for forty hours, drain as in winter, spread seven inches deep in heating box (no cloths are required for summer), closely observe the heat and smell before alluded to; if too much heat, and no sprouts are formed, furrow the mass, which is simply done by forcing a blunt piece of wood through it (a process which maltsters call "ploughing"). Sprouting having commenced, turn into box No. 4, and repeat the turning every twelve hours, spreading the grain four inches deep. Here will be observed the difference of summer and winter management, double the space being required in summer for preparing the same quantity.

Winter Saccharization of Barley.

Steep for fifty hours, or cover 60 if the grain has been harvested in a very dry summer, drain the grain twenty-four hours, spread eighteen inches deep in heating bed, and cover with cloths. Observe the same heat and smell as in the wheat. Turn from box to box every twenty-four hours, ten inches deep the grain. Barley, during winter, requires but little turning; it may really remain in box No. 5, until fit for use, that is, until the sprouts begin to clasp each other.

Summer Saccharization of Barley.

Steep for forty-eight hours, drain twenty-four hours, spread eleven inches deep in heating box, turn every twelve hours, observing more frequent turning in summer than in winter. Fit for use in from eight to ten days.

Germination of grain is much influenced by temperature, hence difference of summer and winter fabricaton. A difference, I have before observed, is also required in the management of wheat and barley.

The water must be clean, and changed for every steep; and the boxes must be swept clean for every fresh germinating mass.

Only have boxes of required size, and the smallest quantity of grain (even a quart) can be germinated. A space of three feet square and eleven inches deep, will contain four bushels of raw grain.

Double space is required for summer as for winter fabrication.

Steep enough at one time for three days' consumption. Example: for sixty-four sheep three bushels. This quantity will give each sheep one pint daily, for three days.

Immediately one lot is taken from the steep, place in another, sufficient for three more days, then a third immediately the second lot is removed from the water, and so on until all the different compartments are occupied with grain, and thus regulate the supply and demand.

To germinate grain in summer much more attention is required than in winter; high atmospheric temperature so much influences the saccharizing process (wheat especially), dextrine being formed, and turning the grain not attended to, it exudes from the surface of the grain, which, with the decomposing albumen and gluten, the heap becomes one adhesive and putrefying mass.

The more the grain is drained after removal from the steeping tub, the more kindly it will sprout. The draining vat, with perforated bottom, requires elevating from the ground.

Wheat, in germinating, increases one half; barley one third in bulk.

Where roots or grasses are used, and sheep require fatting, each sheep may have of germinated wheat one quart, or barley three pints, mixed with chaff, daily.

Germinated grain is a perfectly harmless food, hence is of greater value over all other feeding stuffs. After a week's feeding, a sheep may consume half a peck daily, and not be injured. The youngest lambs may eat of it with safety.

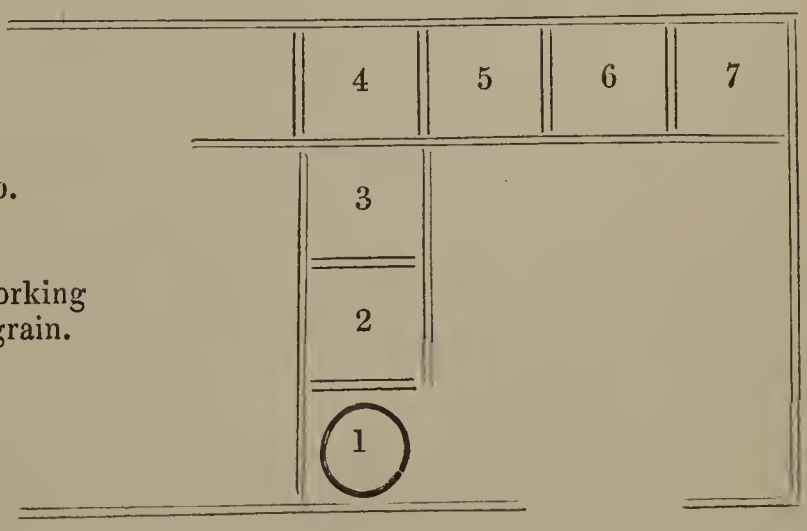
The boxes, as shown in the subjoined plan, are very important. The same depth of grain can be kept at the sides as the middle of the heap, and the grain requires but little turning after taken from box No. 4; indeed, during winter, I have often allowed it to remain in this box until fit for use.

The grain requires to be only half the depth in No. 4, 5, 6, 7, as in No. 3, the heating box.

Heat is spontaneously generated in No. 3 box. The grain in the heating bed only requires covering with cloths, and in this only during winter; unless from excessive cold germination is suspended, and in that case the grain requires covering in any of the beds, or laying of greater depth.

It was when my experiments were limited to the feeding of a few scores of sheep, and during winter, that I found boxes so extremely useful in effecting saccharization of the entire bed; but now that saccharized grain is becoming so extensively used (on one farm alone fourteen sacks per week are now being consumed, and another flock master is making arrangements for preparing forty sacks per week), it has been found more convenient to work the grain, during saccharization, upon a brick, clay, asphalte, or boarded floor.

Plan of boxes for saccharizing small quantities of grain.



1 Macerating tub.
2 Draining vat.
3 Heating box.
4, 5, 6, 7 For working the grain.

The boxes should be of a fit size to hold three days' consumption. Three feet square, and eleven inches deep, will hold four bushels of grain. Only have boxes of proper size, and the smallest quantity of grain can be germinated. These boxes are made simply by placing an eleven-inch deal upon the edge, from side to side of a floor, and the space so formed intersected by other pieces of deal of the same depth. (See plan.)

ON INFLUENZA.

By W. Hunting, Veterinary Surgeon.

Having attentively read the opinions expressed of late by many of the most eminent men in our profession on the disease termed influenza, I am led to make a few remarks upon what I hold to be a very erroneous use of the term. We read of one case in which the respiratory organs seem to be most affected; of another, in which the liver is visibly deranged; and a third, in which the whole system is "out of sorts;" and they all are designated influenza. Now, I look upon this word as doing a great deal of mischief; it has somehow usurped the place of the common intelligible word, fever, and it leads people to think they have got some mysterious disease, of a protean character to deal with. If we make three divisions of the disease—into catarrhal, bilious, and rheumatic—why not also speak of gastric and asthenic influenza, instead of gastric and asthenic fever?

No wonder we hear of such strange anomalies in the treatment. One practitioner bleeds, and cures; another, if he bleeds, as certainly kills; one finds blisters very beneficial, another finds them only an aggravation. How can we reconcile this? Are they all cases of influenza? Yes! but influenza is more than one disease. Does any one believe that it is one and the same disease in each of the above cases? I decidedly do not. I do not mean to accuse any one of ignorance. No doubt they are divisions of what is now called influenza; but that word, from meaning a fever of an epizootic-catarrhal type, has got to mean a fever of any type, and with any complication. Professor Varnell says, in his article on influenza, "it is characterised by febrile and catarrhal symptoms." The late Mr. Barlow wrote, "Influenza may be defined as an epizootic catarrhal disease, and most old authors give the same definition. We know that it is

sometimes called 'the distemper,' and an old groom, seeing a horse with a cough and a discharge from the nose, will say, 'He has got the distemper,' applying the synonym to a *catarrhal* affection."

Taking these things into consideration, I would say that when influenza first made its appearance amongst horses, it was a catarrhal fever resembling the influenza of the human subject, and thus got its name; but since that time it has been added to, till we now get descriptions of half a dozen different forms. The reason of these additions I explain as follows. We all know that in no disease are the ordinary symptoms of simple fever more prominent than in influenza. Now, these febrile symptoms have been mistaken for a specific disease, viz., influenza; and the catarrh for a mere complication, instead of the *diagnostic* symptom, so that when a case of simple fever is met with it is called influenza; and if the liver happens to get implicated it is called by the vague term bilious influenza, instead of bilious fever, as it undoubtedly ought. Now, although these cases may be treated properly and recover, yet, I would say, correct the nomenclature; let us speak of bilious and rheumatic *fevers,* and leave the term influenza to mean an *epizootic catarrhal* fever, as it was intended to when first made use of.

If our present meaningless names do not lead to erroneous treatment, they decidedly lead to confusion. How can we ever arrive at either the cause or the correct pathology of a disease which is very differently understood by different individuals? One means a simple fever, another a catarrhal fever of a low typhoid type; the one states it is not contagious, the other as stoutly asserts that it is; and yet they are both speaking the truth, and both speaking of what is now one disease—influenza.

Facts and Observations.

Preservation of Dead animals.—Professor Gorini, of Lodi, near Turin, has been engaged for many years past in perfecting a process for preserving dead bodies from putrefaction. His preparations of the human body have for some time been so excellent as to look like wax, the lips retaining their natural colour, and the expression being scarcely altered. For the purposes of dissection this method is likely to be of great practical value, as bodies can be retained in a

state of softness and freshness for six months. After this time the preparations begin to harden, and to assume a mummy-like aspect, but immersion in water restores them to their original softness. As yet M. Gorini has kept secret his process of preservation, but it is hoped that in the interest of science he will soon make it public. The process does not seem to be tedious or expensive, for he takes only one day in preparing subjects for future dissection, and for this operation he charges but four shillings. A commission of the Royal Academy of Sciences at Turin reported upon this process at the close of last year, from which report these details are derived. It is not only applicable for anatomical purposes, but can also be employed to preserve specimens of natural history, and to keep butcher's meat from change.—*The Quarterly Journal of Science.*

Properties of Muscular Tissue.—Dr. Marcet states this tissue is a porous body, and participates in the properties of colloid substance. Its porosity allows it to be traversed by solutions of albumen, which, however, only proceed through it at half the rate of a solution of phosphoric acid; thus showing that, like colloid bodies, it opposes a certain obstacle to the transfusion of other colloids, and facilitates the passage of crystalloids.

New Forms of Anæsthetics.—Mr. Nunneley showed to the members of the British Medical Association two substances, the bromide of ethyl and the chloride of olefiant gas, which for some time past he had used as anæsthetics. He stated that he had not lately performed any serious operation, either in private practice or at the Leeds General Infirmary, without the patient being rendered insensible by one or other of these agents; each of which he believed to possess important advantages over chloroform. They were amongst the many analogous bodies experimented upon by him, and were favorably mentioned in his essay upon Anæsthesia which was published in the *Transactions* of the Association for 1849. At that time the difficulty and cost of their manufacture were too great to allow of their being commonly used. This difficulty had, however, been overcome; and, should their use become general, they can be made at a cost not exceeding that of chloroform, if not at less. They both act speedily, pleasantly, and well. The patient might be kept insensible for any length of time, while the most painful and prolonged operations were being performed. No disagreeable symptoms had in any case resulted from their use.

THE COPPER-SMOKE QUESTION.—For many years past the subject of utilising or neutralising the effects of the obnoxious copper smoke has received much attention from practical chemists and the smelters engaged in the trade. In the neighbourhood of Swansea, where there are large copper works, the effect of the smoke is such that vegetation is completely destroyed for miles around, and the result is that the copper smelters have to pay enormous sums of money as compensation for the land that is thus rendered valueless. Various remedies have been attempted to neutralize the poisonous effects of the smoke, such as high stacks, conductors, condensers, &c., but only a limited degree of success has been attained. It is well known that the smoke possesses some valuable properties, which, if separated from the other ingredients, could be utilised and made profitable, and nearly all the inventions proposed have had these objects in view, but hitherto, as already stated, the attempts have ended in failure. Messrs. Vivian and Sons, the extensive copper smelters, have recently determined to adopt the patent of a German chemist, and Mr. H. H. Vivian, M.P., the senior partner, has stated publicly that he believes, after a careful investigation, that the invention will prove completely successful, and that it will enable the firm to make 1000 tons per week of sulphuric acid from the copper smoke, which is now not only of no value, but a source of great loss, owing to its injurious effects on the surrounding vegetation. The completion of the necessary works is looked forward to with especial interest by those who are engaged in the copper-smelting trade.

The editor of the *Chemical News*, whence the above is extracted, says that Mr. Spence has already taken out several patents for effecting this object, which is successfully carried out at his works near Manchester.

SOME OF THE USES OF WATERY VAPOUR IN THE AIR.—Professor Tyndall says, the part played by aqueous vapour in the economy of nature is far more wonderful than hitherto supposed. To nourish the vegetation of the earth the actinic and luminous rays of the sun must penetrate our atmosphere; and to such rays aqueous vapour is eminently transparent. The violet and the extra-violet rays pass through it with freedom. To protect vegetation from destructive chills the terrestrial rays must be checked in their transit towards stellar space; and this is accomplished by the aqueous vapour diffused through the air. This substance is the great moderator of the earth's temperature, bringing its extremes

into proximity, and obviating contrasts between day and night which would render life insupportable. But we can advance beyond this general statement, now that we know the radiation from aqueous vapour is intercepted, in a special degree, by water, and, reciprocally, the radiation from water by aqueous vapour; for it follows from this that the very act of nocturnal refrigeration which produces the condensation of aqueous vapour upon the surface of the earth—giving, as it were, a varnish of water to that surface—imparts to terrestrial radiation that particular character which disqualifies it from passing through the earth's atmosphere and losing itself in space.

Destruction of Parasites.—Mr. J. Swindells, of Wigan, in a letter to the editor of the *Chemical News*, says, "Sir,—noticing in the *Chemical News* for January 7th a reference to petroleum as destructive to parasites on the human body, I desire to say that my attention has been for a considerable period directed to the application of chromic acid or bichromate of potash for the same object; having applied it to ringworms and every other skin disease with complete success, and having also applied this acid to animals, especially to cow's feet, with the same satisfactory results. In preparing the solution, I use one ounce of bichromate dissolved in six ounces of water, then apply the solution to the place affected, one dressing generally being sufficient. I may remark that this solution should not be used too often, because by its repeated application the caustic effects of the acid will cause a wound. But this is not at all dangerous. My experience in the application of this acid has been very long, and I never found it to fail in destroying parasites."

Combination of Chlorine and Hydrogen.—This has been effected by means of the magnesium light by M. Lallemand, of Versailles, who found that the explosion took place with the light of a single wire of magnesium burnt in the flame of a spirit lamp.

Phenic Vinegar as a Disinfectant.—In a previous number we adverted to the disinfectant properties of phenic acid. Dr. Quesneville states that the following formula will be found most effective for hygienic purposes as an antiputrescent: take of acetic acid (5°), 900 grammes; camphor in powder, 5 grammes; crystallized phenic acid, 100 grammes.

Test for Zinc.—Professor Bloxam recommends that the

supposed sulphide of zinc be dissolved off the filter with hot dilute nitric acid, and the solution mixed with a very minute quantity of nitrate of cobalt. The whole is then to be precipitated with carbonate of soda, the product collected on a filter, washed, dried, and afterwards incinerated on platinum foil, by which the green colour, confirmatory of the presence of zinc, will be obtained. In this way Mr. Bloxam says $\frac{1}{1000}$th part of zinc may be detected.

Respiration of Plants.—From some recent experiments, it appears that plants do not decompose carbonic acid, even in light, unless it be diluted with atmospheric air, oxygen, hydrogen, or nitrogen; the same thing obtains in the combustion of phosphorus, and even oxygen itself is not fitted for the respiration of animals and man unless it be diluted.

Effects of Curarine.—M. Claude Bernard states, that the active principle of curara acts similar to the substance whence it is obtained, but more intense. It is absorbed with great difficulty from the intestinal canal, but acts more powerfully when introduced into a wound. The alkaloid curarine is prepared by M. Preyer, from the curara or curarine poison scraped from off the arrows of Indians, or from the poison as obtained in little clay pots. It is first treated with boiling alcohol, which is distilled off, the residue is then treated with water and filtered, to separate the resin, and the filtrate is precipitated by bichloride of mercury. This precipitate contains the curarine.

Isolation of Arsenic.—It is stated in *Cosmos*, that of all metalloids arsenic is most easily isolated by electricity. A simple method of effecting this is as follows:—Place an arsenical solution in a platinum vessel; plunge a wire of zinc into the liquid, and the arsenic will appear on the platinum. By allowing action to continue, the whole of the arsenic will be withdrawn. It is suggested this may prove valuable in medico-legal researches, the sensibility of the process being very great.

Formation of Steel by Gases.—M. Bérard converts cast-iron into steel by the alternate oxidation and reduction of it. The oxidation is effected by the introduction of atmospheric air into the fused cast-iron, and the reduction by the introduction of a mixture of hydrogen and carbonic oxide. After twelve or fifteen minutes these processes are reversed, and this alternate action is continued until good steel has been formed, which is ascertained by testing.

THE VETERINARIAN, OCTOBER 1, 1865.

Ne quid falsi dicere audeat, ne quid veri non audeat.—Cicero.

OPENING OF THE SCHOLASTIC SESSION AT THE ROYAL VETERINARY COLLEGE, (ADDRESS TO STUDENTS).

Although this number of the Journal may not be in the hands of our readers long before, we would remind them that the Scholastic Session at the Royal Veterinary College, opens on Monday, the 2nd inst. The introductory address will be delivered by Professor Varnell, at 12 o'clock.

From experience we know full well how encouraging, on these occasions, is the presence of those with whom we have been long associated, and to whom the members of the profession look up, as those who have contributed to its advancement, by promoting all measures conducive thereto, and whose suggestions, from their long standing in the profession, are esteemed of great worth. A goodly number of such friends we anticipate the pleasure of meeting on this occasion.

And now, as we have been wont to do in former years, we will address ourselves to the student of veterinary medicine, in whose welfare and progress we confess ever to have felt an interest.

The period of youth may be compared to the spring time of nature, associated as it is with the subsequent relations in life; for, as a rule, the effects that follow the right cultivation of that season, whether it be in the production of fruit or of flower, vary but little. "We rely upon the operation of the law of nature; we expect it to fulfil its purpose, and it does so from year to year; it has done so in all past ages, and will do so, we believe, in all coming time. There is a like connection between the means we use and the ends we attain in the culture of the mind, the heart, the higher life, in the spring-time of our days."

The student will do well to remember, that the present

is no time for idleness and folding of the hands in ease; instead thereof he must be content to labour in his profession, if he wishes to maintain himself abreast of the growing state of knowledge at the present day. The story of Michael Angelo will not be forgotten by him, who, at the age of nearly eighty years, made a drawing of himself as a little child in a go-cart, with a hornbook before him, and underneath he wrote the motto, "Oncora impara,"—still he learns.

"Were man to live coeval with the sun,
The patriarch pupil would be learning still,
And dying leave his lesson half unlearnt."

You have been told that "once a student always a student." This has been done with a view to stimulate you to continued exertion. Let it never operate as a check to your advancement. Life's a stage, and all men merely players, as Shakespeare tells us; and according as each performs his part so will be his reception by the public. Then, again, life is made up of different stages. It might crush one's resolution to see at a glance all the labour we have to perform in life, but being broken up into parts, and having succeeded in overcoming one obstacle, we are strengthened to meet another, and although each part may increase in power beyond the other, yet the mind being correspondingly strengthened no difficulty will be experienced in our combat with each. It is well, therefore, that these successive divisions or steps exist, and it is equally wise to meet them as they come. Difficulties always lessen in their formidableness as we approach nearer to them, or facilities for overcoming them are seen to exist that we were before ignorant of.

"The mighty pyramids of stone,
That wedge-like cleave the desert airs,
When nearer seen, and better known,
Are but gigantic flights of stairs.

The distant mountains, that uprear
Their solid bastions to the skies,
Are crossed by pathways, that appear
As we to higher levels rise."

Always set your standard high, for so will be your attainments. You may, perhaps, not strike the mark at which you aim, nevertheless, if you come short of it, you will be no loser. The ignorant may possibly jeer at your failure, but you will be able to treat that with indifference, for you still stand higher far than they do. Philosophy has its charms and its rewards, but both must be laboured for. Plato, in his gradations to happiness, as the first step makes the desire for wisdom, then he adds the study and contemplation to attain it, from these he rises to wisdom itself, and from wisdom to happiness, so that philosophy is the principle; wisdom does then begin, which has its end in happiness. All actions, we are told, are but the emanations of the will, and the will receives her apprehensions from the mind; but still both must be concurrent. We have ever been advocates for the acquirement of knowledge based on philosophy, remembering what the poet has said—

> "How charming is divine philosophy!
> Not harsh and crabbed, as dull fools suppose,
> But musical as is Apollo's lute,
> And a perpetual feast of nectar'd sweets,
> Where no crude surfeit reigns."

Knowledge never leads to satiety, since the more we know the more we find we have to learn. Its pleasures, therefore, never cloy. The mind, like the body, might by study become fatigued, but then, like it, a little rest gives to it new vigour, and its capacity becomes immensely increased. It were supererogatory to point out what the application of knowledge has effected in this our day, in the use of steam, electricity, and of light. The philosopher's stone has been more than discovered, since that which was once mere waste is now converted into usefulness, the proofs of which are too numerous to mention here. It might be well asked—What is that which produces the striking difference between civilized and savage nations? It is answered—knowledge. What is it that raises man above the lower creation?—knowledge. What is it that elevates one man above another, and produces the chief difference among men as they appear in society?—knowledge. What was it

that raised Franklin from the humble station of a printer's boy to the first positions of his country?—knowledge. What was it that raised Herschel from a poor fifer's boy in the army to be one of the first astronomers?—knowledge. What has given to Elihu Burritt his status in society, and caused him to leave his anvil and his home behind, and to travel for the good of his fellow men, urging them to deeds nobler than those of warriors?—knowledge. Thus, in the language of Bacon, knowledge becomes power; an aphorism, however, uttered by Plato long ago.

But it may be said, in the language of wisdom, "Knowledge puffeth up." This may be the case when it has no counterbalance. If, however, the mind be correctly regulated, a sense of its imperfections and short-comings will ever keep it humble, knowing that there is a height to which it never can attain, whatever may be its aspirations. This self-same knowledge, too, is progressive. By it erroneous notions are eradicated, numerous imperfections detected, vain fears and fancies dissipated, imaginary evils cured, false notions of pleasure destroyed, and real delight acquired. The poet has well said—

"Man, know thyself: all wisdom centres there."

It has been stated that the acquirement of knowledge ought to be, and might be, as pleasant as the acquisition of adipose tissue or of muscle. The mental appetite, however, needs to be provoked, and proper aliments furnished, or healthy digestion will not follow, nor assimilation take place. Let our aim and object ever be the obtainment of right principles, since these hereafter being developed and applied, cannot fail to advantage the fortunate possessor. They resemble Dryden's acorn:

"Within its little shell the oak's vast branches were."

Principles have been rightly designated as the reformers of abuses and the revisers of systems. Who does not know the marked change that has been effected in the science of veterinary medicine since their inculcation in schools or colleges? We never doubt the success of the practitioner who is thus panoplied. For a time, perhaps, he may have

to contend with presuming ignorance, but in the end he will be more than conqueror.

Whilst anxiously striving to get on in life, as it is expressed, which is commendable, you will do well to remember that success in life is not the greatest and best object to have in view, but that self-culture, and the development of all that is morally good in us, constitutes true nobleness of character. The talent is not to be wrapped in a napkin and laid by, but to be turned to account—to be used; in other words, the abilities we have are to be exercised; the seed sown is to be carefully nurtured, or no fruit will result. There can be no questioning the fact that education has effected much; indeed, the sceptre of education rules the moral world, yet knowledge is not intuitive. Each one has only as much as he labours for, its acquirement being always accompanied with more or less mental industry. There is no *via regia*. The ignorant at the present day are altogether without excuse; yet how rarely do persons trouble themselves to think, to read, or examine independently. Generally speaking, the masses are contented to do as others have done before them, pursuing the same dull, monotonous round, like a horse in a mill. Doubtless there are exceptions, but these occur among the few; and, were it not for such, science would stand still, and no discoveries nor any alterations be made. Indolence is common to our nature. Zimmerman says, "If you ask me which is the real hereditary sin of human nature, do you imagine I shall say pride, or luxury, or ambition, or egotism? No. I shall say indolence. Whoso conquers indolence will conquer all the rest. All good principles must stagnate without mental activity."

To the aspirant in science we would say, let no deluding thought of having acquired enough ever take possession of your mind, or check you in your pursuit of knowledge. Idleness is destructive. Who would lie—

> "Like a villainous flag upon the stream,
> To rot himself in motion?"

Rather continue to work on, remembering—

> "That to labour and endure
> Gives dignity to man."

Be sure you never can know too much. And, above all, never allow an overweening opinion of yourself to obtain the ascendency. Remember the saying of Napoleon, "No man is necessary." No mere man ever yet existed the world could not do without. But should it be the case, as too often it is, that in early life self-sufficiency exists, depend upon it that, as you ascend the ladder, it will be dissipated, and a healthier feeling take its place. A good horse when starting on a journey will sometimes curvet and prance about, but he soon settles down to a quiet pace, and shows, by his bold step, noble action, and capability of endurance, what stuff he is made of. We associate with others, and find them to be better than ourselves; or if not, we are soon taught by reflection, that we are not what we might have been, or ought to be. Ambition may prove slippery ground on which to tread, a dangerous ladder to ascend, and the higher we have reached the more fearful will be the height from which to topple. But Shakspeare has told us that—

"Lowliness is young ambition's ladder."

And in some things 'tis lawful to be ambitious. 'Tis lawful to endeavour to excel, and to be patient in the continuance of well doing. "A life without ambition is a life without hope, and a life without hope is a life without energy." It will be well, likewise, to remember what the wise man has said—"In all labour there is profit;" lest we should grow weary, and fail of success.

Perhaps we cannot do better than close this address with the following remarks on education, by one of our most celebrated statesmen: "Bear in mind that youth is the time especially for the acquisition of knowledge, and for the formation of sound habits, which are of essential value in after life. It has been well said that it is a solemn thing to fold up and lay by any portion of one's life as so finished and complete that we can look back on it with honour, thankfulness, and satisfaction. But there is no period of life in which it is a more solemn act to fold up and look back upon life, than in the period of youth, because the opportunities given us in youth never can be repeated.

Youth is the seed-time of a rich harvest of benefit and blessing and advantage to us hereafter, if it be rightly improved; and it is the seed-time, unfortunately, to too many, who neglect and waste their time, or spend it in sensual indulgences, of remorse, disappointment, and sorrow."

ALTERATION IN THE EDITING OF THE JOURNAL.

Our readers will observe that an alteration has been made in the editing of this Journal—one which we feel convinced will meet with their approval. The addition of the names of persons so well known to the profession as Professor Varnell, Professor Tuson, and Professor Brown, cannot but add worth to our Journal. Both have freely contributed, to the pages, yet now a greater degree of responsibility will be felt by them, and by union strength is gained. We assure our readers that it is from no sense of failing strength, or support, this alteration has been made, for we never stood so strong as journalists; nor were our labours—feeble and imperfect though they may be—more highly appreciated than now. Having, however, done so well, we are desirous of doing still better, although we may have no fresh protestations to make, nor any changes of moment to propose. The same undeviating course will be pursued by us as was adopted at the beginning, and our united efforts will be to aid in the progress of the profession, in which we believe of late years some important advances have been made. We would still garner up the wisdom of experience, and render it subservient to the interests of those we wish to serve; and we do this *con amore*, because we owe much to our friends. The support we have hitherto received from them we shall continue to need, as well as the encouragement of those who are like-minded with ourselves. It has been said, "this is no time for veiled speech; with open face, and not with drawn visor, must the battle of truth be fought." We fear not that sycophancy will be laid to our charge; we have ever maintained our independence, and shall always do so,

for we love freedom, and believe that thus alone can the object we desiderate be obtained.

One of our statesmen has said that "the line of earnestness will never be the line of unity of opinion, for wherever there is earnestness there will be diversity of opinion." This may seem paradoxical, but oneness, or uniformity of opinion, cannot, strictly speaking, exist among many minds; nevertheless, each seeking that which is of minor or of no importance, harmonious action will in the end result; all being actuated by right motives, and holding firmly that which is essential to the well-being of the body, and each contributing to the perfection of the whole. In this way it is we wish our profession to be true to itself.

Extracts from British and Foreign Journals.

CATTLE PLAGUE IN FRANCE.

The Minister of Agriculture, Commerce, and Public Works, has recently addressed the following Circular to Prefects.

PARIS; 11*th September*, 1865.

SIR:—You are aware that an epizootic which is called in France "*typhus contagieux des bêtes à cornes*," in Germany "*Rinderpest*," and in England, "Cattle-plague," has been, for the last two months, committing ravages in the latter country, where, radiating from the metropolis, its original focus, it has spread from place to place as far as Scotland, where it has already destroyed many cattle, especially in the Edinburgh dairies.

From Great Britain, where it remained confined for some weeks after its invasion, the epizootic has communicated itself to Holland, and from Holland to Belgium.

France, therefore, is now threatened. It is of the utmost importance to take precautions against the possible invasion of this scourge, and to adopt at once every measure calculated to prevent its spread in our country, if, notwithstanding the imperial decree of the 5th of September, and the ministerial order of the 6th, by which that decree was followed, it should contrive to cross our frontiers.

I have consequently the honour of addressing to you instructions relative to this epizootic, in order to inform veterinary surgeons, local authorities, agriculturists, and proprietors, what is indis-

pensably necessary to be known of its nature and its mode of propagation, and in order to remind you of the measures of sanitary police, which should be adopted in all the localities where its appearance is notified. The history of this epizootic, from which France has already had to suffer in the last and at the commencement of the present century, shows the possibility, if not of always warding it off, at any rate of reducing considerably the proportion of losses which it occasions, by the well-regulated application of the measures of sanatory police which our legislation provides.

I cannot, then, urge upon you too great vigilance in this respect.

Contagious typhus of horned cattle is a disease foreign to our climate. In the different countries of Western Europe, it never develops itself spontaneously, however defective the hygienic conditions under which herds of cattle may exist. It is in the vast plains of Hungary and Russia, known under the name of *steppes*, that the plague is generated; it is there, and there only, that it finds the conditions necessary to its spontaneous development; and, with regard to this question of origin, such is the certainty established, after the scientific investigations of the masters of veterinary medicine in Russia, in Germany, and in France, that it may always be affirmed, without fear of error, when cattle plague appears in a region of Western Europe, that it has been imported thither in one way or another.

The present invasion of England furnishes no exception to this rule, whatever may have been said upon this point on the other side of the channel. It is certain that it is the typhus of the steppes which is ravaging that country, and that, before its appearance in London, where the first outbreak took place, a cargo composed of three hundred animals had been shipped at Revel, in the Gulf of Finland, for England, and had arrived there by way of Lubeck and Hamburgh, after a passage of about six days, thanks to the rapidity of the means of communication.

The exotic character of the plague cannot, then, be contested.

But if the plague is exotic, and is only generated in the region of the steppes, it is too often seen to cross the limits of its native country, owing to its eminently contagious qualities, and to attack bovine animals in countries in which the conditions of its spontaneous development do not exist. Its most ordinary course, in past times, has been along the routes which have been pursued by the armies of Austria and Russia, whose victualling herds are principally composed of steppe cattle. Less frequently it has been introduced by the roads of commerce by land and sea.

The propagation of the plague from an infected locality into a neighbouring, or even a far distant one, as the case of England is now demonstrating, may be effected in different ways.

The most efficacious of all is the transport of sick animals. A single plague-stricken beast is sufficient to infect a whole country. Actual contact is not required for the propagation of the disease, the plague is communicated at a distance by the emanations from

the sick; and these emanations are powerful enough to act in the open air.

Morbific germs of the disease may be borne to a distance by atmospheric currents, and infect herds in pastures when sick animals pass along the roads which lie upon their borders.

Healthy animals which have been in relation with sick ones, and have become impregnated with the seeds of their disease, still retain an external appearance of health for a certain time, the duration of which varies from six to ten days. This peculiarity, common as it is to a large number of contagious diseases, is one of the most powerful causes of the propagation of the plague; for the owners of infected animals, looking only to their personal interest, too often carry them as fast as possible to fairs and markets, to realize their value at once, and secure themselves against the loss which they might otherwise undergo. Hence the possible and frequent dissemination of the evil in all directions by animals which, under the appearance of health, conceal in themselves the germ of a disease at present hidden, but the development of which is fatal and sudden. The history of the existing epizootic in England shows, that in this way especially, the plague has radiated from the metropolis into a great number of the neighbouring districts, then, from place to place, into those more remote, and finally into Scotland.

But it is not alone the animals which are actually ill, or which are on the point of becoming so, that are the agents of the propagation of the plague; those which have had the malady and are convalescent, may also transmit it, with all its malignant properties, even though it appear to be extinguished in themselves. The plague may be transmitted by forage impregnated with the breath and slaver of the sick animals, by the grass on which they have been pastured, by the liquids of which they have drunk.

The clothes of men, the fleece of sheep, the hair of dogs and of other animals may become charged with morbific matter and carry it to a distance.

Finally, it may be propagated by manure, coming from infected sheds, into the composition of which morbific deposits enter in so large a quantity, by the remains of the dead beasts, by their fresh hides, and even by the cords which have served to fasten them and which are still soiled with their slaver or their blood.

As may be seen from this summary account, there are numerous ways in which the contagion of plague may be communicated, and it is their multiplicity that explains the facility with which this disease is propagated and the difficulties which are too often encountered in hindering its spread. But these difficulties, great as they may be, are not superior to the efforts of a vigilant and zealous administration, and it is possible to surmount them by attacking the scourge immediately it shows itself in a locality.

The plague being an exotic malady which few people in France have had the opportunity of observing, as its last invasion was so long ago as 1814, it is necessary here to recount its chief characteristics.

In the first stage of this disease, called the incubation stage (because the evil is only at present in its germ in the body, and, so to speak, broods there), animals present all the exterior characteristics of health. They eat, drink, and ruminate as usual, and the cows give the same quantity of milk. It is impossible, then, to recognise them as diseased, which, in fact, they are not, as yet, even though they may be doomed to become fatally so.

This stage has a duration varying from six to ten days.

When the disease appears. it is characterised by prostration and a certain expression of the eyes giving the animal a dull appearance; its head is on the stretch, stiff, carried low, with the ears lain back immovably; the back is depressed in the middle, and the posterior members droop under the body; the hair is dull, rough, and dry to the touch; at the bends of the joints, especially in the region of the axillæ and groins, the skin is damp with sweats, which cause the raising and denudation of the epidermis.

Rumination is not always suspended during the first days of the disease, but it does not continue with its habitual regularity. The animal grinds its teeth and gapes frequently.

Then appear general tremblings, showing themselves especially behind the shoulders, on the groins and on the buttocks, with alternations of heat and cold, especially towards the base of the horns, on the ears and at the extremities.

The eyes are red and watery, and the tears which flow abundantly from them have so much acidity as to plough a sort of furrow on the face; the epidermis detaches itself from those places on the skin over which they flow.

A discharge takes place, through the nostrils, of a liquid which is at first watery and acid like the tears, and which, like them, produces epidermic erosion on the parts of the skin with which it remains in contact.

With the progress of the disease the humours of the eyes or of the nose become purulent, and then the breath which the animals exhale is frequently fetid. At this time respiration is quick, becomes difficult, and is accompanied by a wheezing noise audible at a distance on entry into the sheds.

From the mouth a foamy saliva escapes, which forms white flakes round the lips. On the border of the upper jaw, on the gums and on the papillæ of the cheeks, the epidermis, raised by watery matter, ceases to adhere to the parts, and detaching itself easily under the pressure of the fingers, exposes active sores of a deep red.

At a more advanced stage of the disease, the head sways from side to side with a sort of trembling, something like that of old men, and, at the same time, rapid movements of respiration communicate to it, each time that the flanks are depressed, a shock from beneath.

Diarrhœa is not long in showing itself. At first the excremental matter is expelled in a liquid state, with great force, and associated with gases which impart to it a characteristic fetor; then, when the canal is empty, the deposits become serous; at last, in the final

stage, the evacuations assume a brown tinge, which they owe to the blood mixed with them, and exhale an extremely fetid odour.

In proportion as the disease progresses the weakening of the vital forces becomes more apparent; the patients fall into a state of extreme prostration, can scarcely keep themselves upright, nor preserve their balance when forced to put themselves in motion when stimulated by goads or dogs. Generally they remain in a recumbent position, with the head stretched out and resting on the chin. The stupor is extreme; the eyes are turned deep in their sockets; a purulent humour fills the space which has been formed between the globe and the eyelids; the rheum, which is thick and streaked with blood, stops up the nostrils to such an extent that the animals are obliged to breathe through the mouth; the temperature of the body is perceptibly lowered, and if a hand be placed on the skin of the back or the loins, a sensation is communicated similar to that given by the touch of a cold-blooded animal. Often at this stage a very characteristic symptom shows itself, in a swelling on each side of the backbone, caused by the spontaneous development of gas beneath the skin. By feeling this region a sensation of crepitation is induced, and it gives, on being tapped, a sound analogous to that which may be heard in slaughter-houses when the skin of an ox distended by air is struck.

When once this symptom has appeared the animals are cold and insensible; flies cover them as if they were already corpses. These latter congregate round the natural openings, and deposit their eggs, which have sometimes time to hatch there; to which is owing the appearance of a fact which was formerly considered as a special expression of the disease, but which is obviously only a secondary accident resulting from the almost perfect state of insensibility into which the animals have fallen.

The secretion of milk is dried up almost entirely from the first appearance of the disease; the teats wither and become flaccid and cold, and what little milk they may give is serous and of a decidedly yellow tinge.

Among the females there exists a symptom which is of much use in facilitating the diagnosis of the disease when a number of beasts have to be examined, and a hasty decision pronounced,—which is, the peculiar colouring of the membrane of the vagina, which has a reddish mahogany tinge with marbling of a still deeper shade.

The rapid and excessive loss of flesh of the diseased animals is one of the peculiar characteristics of this affection, and one which is more marked as life is more prolonged. The patients become lean; their muscles, obliterated and like parchment, show all the outline of the skeleton, especially in the region of the pelvis, which is deeply furrowed with excavations.

Death usually supervenes from the third to the twelfth day, life being seldom prolonged beyond this latter period.

To sum up, putting aside subordinate details, an animal seized with the plague is easily recognised by a combination of the following symptoms:—Immovable attitude, arched back, legs bending

under its body, head stiffly thrust forward, ears lying back, dull look, weeping eyes, running at the nose, foaming mouth, quivering head, grinding teeth, short breathing, wheezing noise, general tremblings, abundant and fetid diarrhœa, swelling of the dorsal region by gases which accumulate under the skin, lowered temperature of body, extreme weakness, prostration, stupor, deep-red colouring with marbling of the membranes of the womb, drying up of the milk.

Morbid Anatomy of the Plague.

In the third stomach, or omasum, an injection of the numerous laminæ of this organ, spots of ecchymosis diffused over a great number of them, ulcerated perforations of some, drying up into cakes of the alimentary matters between them.

In the rennet, or fourth stomach a very free injection of all its folds, which assume a reddish mahogany colour, and in some cases frequent ulcerations scattered over the surface; these ulcerations reflect a tinge of a faint white.

In the small intestine honey-combed surfaces formed by the union of full or ulcerated pustules on the Peyer glands.

This lesion is not constant in the small intestine, but what is always noticeable on the mucous surface of the intestine is, that it is interspersed generally with longitudinal streaks, crossed irregularly by transverse ones, which form upon the membrane an irregular network with large meshes exceedingly well defined.

In the colon small and very numerous ulcerations, inside which is a little clot of blood projecting into the intestine; if this clot be scraped away a sufficiently deep ulceration is exposed to serve as a point of insertion. There is a general infusion of all the mucous fluid of the colon and that of the rectum, with streaks and areolæ like that of the small intestine.

The spleen is generally healthy.

There are deep petechial and ecchymose sores on the heart.

There is general emphysema of the lung, the lobes of which are isolated between the thick folds of the cellular tissue, which are distended by the gases exhaled in their areolæ as in those of the subcutanous cellular tissue.

There is effusion of the mucous fluid of the bronchia and the larynx, and exudation to its surface of purulent mucus condensed in false membranes in the larynx.

There is no ulceration in this membrane.

Cattle plague is a disease which, as experience has too often proved, in the greater number of cases reigns superior to all the resources of art. It is not, then, to means of treatment that we must look to preserve the property of individuals, and with it public property, when this epizootic attacks the bovine animals of a country, but rather to the most minute precautions taken with a view to hinder its propagation by the various ways of contagion.

The indications given in these instructions should govern in this respect your line of conduct.

All your efforts should tend, when the epizootic has declared itself in a neighbourhood, to hindering the sick animals from having any communication whatever with healthy ones. You should not even hesitate, upon the first appearance of the disease in a district, to cause the immediate slaughter of the animals first attacked, and of those which have been stalled with them, if your information makes you exactly acquainted with the manner in which the disease has been communicated, and if it convinces you that in stifling it at its first source you can stop its spread and prevent its propagation.

The law arms you with all the authority necessary to adopt this measure when called for by the interest of the public, and the adoption of which involves, besides, the grant of a legitimate compensation to the owners.

As contagion may take place at a distance by the emanations from the sick animals, it is necessary that they should be secluded in the strictest manner in places as far isolated as possible from those in which healthy animals are kept; that they should not be allowed on common pasture, drinking-places and roads; that the persons attending on them should not come in contact with uninfected animals; and that connection should not be established through the medium of other kinds of animals, especially sheep, whose thick fleece may become impregnated with the seeds of the disease, and serve to carry them to very great distances.

Under circumstances like the present the assemblage of animals of the cattle tribe at fairs or markets may involve the most serious consequences, since a single infected animal may cause a great number of those which have been in relation with it to be seized with the disease, and to disseminate it in all directions. It is possible, too, that animals which are only in the incubative stage of the disease may be brought to market by owners who consider their private interest more than that of the public. You will have to see whether the serious state of affairs does not impose on you the duty of suspending public fairs and markets in districts where the epizootic rages; and in case this measure, which is always a serious one, does not appear indispensably necessary, you should prescribe the greatest precautions to prevent suspected animals, on whatever grounds, from being introduced into the markets. These precautions should consist in certificates of health delivered to the drovers by the mayors of the communes from which they come, and the veterinary inspectors of those communes.

TYPHUS IN PIGS.

(*Concluded from p.* 524.)

I DO not know that I need enter into any description of the alteration observed in the dead body of the pig. I may say this, however, that in the pigs I examined the only characteristic changes were limited to the intestinal canal. In two cases there were symptoms of pleuro-pneumonia, or inflammation of the lungs, and an effusion of lymph on the surface of the pleura; but that seemed to be accidental, and not a characteristic of the disease. The characteristic changes were entirely confined to the mucous membrane in the intestinal canal, and they affect two principal types. One is the type in which the disease appears to originate in the isolated follicles, or small mucous glands, of the intestines, and in that way it occurs in a scattered form. These follicles become the seat of a particular cellular formation, and that stage, which is the first stage before ulceration enters in the stomach, is soon followed by a condition of things in which all the diseased mucous glands pass into ulcers or open sores. In the progress of the disorder these ulcers assume very peculiar characters indeed. They have been variously likened by friends of mine to different natural objects. For example, to columba root sliced and stuck on to the intestines, to the marks which the iron used in firing a horse produces on the skin, and to the lichens which attach themselves to the bark of trees.

I am inclined to think that the disease may go to a considerable length, and yet recovery follow. In some cases, and occasionally in other parts of the same intestine, the disease, instead of being limited to the follicles, affects the mucous membrane, and an exudation or false membrane is thrown out, which lines the whole surface of the intestines, exactly as in the cases of human dysentery. I think it highly probable, from what I have heard, that sometimes all the diseases of the intestines take the dysenteric type, and, instead of being in patches, consist of a continuous layer of exudation, or false membrane on the surface.

Now, these are all the facts that have come immediately within my own knowledge. In what I have to add, depending more or less upon the testimony of unscientific persons, I must speak with more reserve, because the subject is so very new. But if the information which has reached me can be relied upon, there are two points of very great importance in the natural history of the disorder: first, that it is viru-

lently contagious; and second, that it is quite peculiar to the pig. I have heard of instances where it has swept away all the pigs in the homestead, as if it were a plague; yet no other creature on the farm, whether man or beast, suffered in the slightest way, so that it really seems to be a disorder that is peculiar to the pig. And a fact like that possesses very great scientific interest. The disease appears to have been known to pig factors in Bristol and its neighbourhood for a considerable number of years; but in their experience, until lately, it only occurred in isolated, or what doctors technically call sporadic cases. Within the last year or two, however, it has become furiously epidemic. I am almost afraid to repeat all that I have heard about it; but two or three men largely concerned in the pig trade have assured me that from ten to fifteen thousand pigs have died in the south and south-west of England of this disease in the course of the last eighteen months; and if that be the case, surely it is high time that the disorder should be seriously investigated. I would here offer a speculation, but merely as a conjecture, which I think may turn out to be true, as to the causes of this disease having become so rife during the last two years. Within ten or fifteen years the discovery has been publicly announced by Dr. Farr, and generally accepted by the medical profession, that typhoid fever in man is much more prevalent in dry seasons than wet: in fact, that it never becomes widely epidemic over the whole kingdom, except in very dry seasons. And the reason I believe to be this. All those contagious disorders are caused by organic poisons which are thrown off from the body in various forms, passing by the bowels in a liquid state. In that liquid state all these poisons perish and rot very quickly. But there is a fundamental law which has never been sufficiently dwelt upon in relation to all these epidemic disorders, which is this, that when once these poisons pass into a dried state, if they can be kept dry, they will retain their powers for almost any period. Thus, we are all familiar with the fact that dry vaccine matter will keep good for two years. Now, my conjecture is that the poisonous germs thrown off in this disorder of the pig within the last two years have passed into the dry state, and in that way have been rapidly disseminated over the country.

In bringing these observations to a close I shall make one or two suggestions of a practical kind; because this is an eminently practical society, and what you want to do with the knowledge acquired here is to turn it to practical and useful purposes. I venture, therefore, to say a word or two on

the subject of prevention. I have stated in my belief this disease is the counterpart of typhoid fever in man. And this is quite ascertained as a settled thing in the case of typhoid in man, that it is a contagious disorder, but chiefly propagated by discharges from the bowels. Now, if these two diseases are the analogues one of the other, the same would hold good of the disorder in the pig. I believe that it is a contagious disorder, and that it is propagated mainly by the discharges from those sores in the intestines which constitute the very essence of the disease. It is the poison which finds its way through the system of the animal, and is cast out of the system into the soil. If pigs in the early stage of the disorder are sent by steamboat, they taint the steamboat. In like manner they taint the market, the sty, and the drains of the sty. The suggestions, then, which I would offer are these:

First. Try to recognise the disorder in its earliest stages.

Second. Separate the sick from the uninfected without the least delay.

Third. And this is fundamental to my mind, because when once this disorder enters a farmyard it goes through all the swine in the place—immediately slaughter the affected animals.

Fourth. All these precautions will be in vain if you do not destroy the infectious discharge from the intestines of the diseased pigs.

You may separate the sick from the disinfected, but if in dry weather you turn your healthy pigs at the end of two or three weeks into the sty or the yard where the others had been ill, you will find the disorder break out anew.

And now permit me to express a hope that the Royal Agricultural Society will take up this matter, and place the investigation in the hands of my distinguished friend, Professor Simonds, than whom there is no man in Europe more competent to conduct such an inquiry. The members of this society have great opportunities. You know that mankind is infested by that remarkable group of disorders which are called epidemics to a fearful degree—smallpox, scarlet fever, typhoid fever, and typhus fever. Physicians have pronounced them to be inscrutable. You have in animals diseases—epizootic diseases—that are the exact counterparts of these, analogous in their nature, propagated and destroying life in the same way, and belonging to the same family. But in studying these diseases in animals you have the enormous advantage of all the problems that arise being put to the test of experimental investigation. You know we cannot

experiment upon men and women as we can upon pigs and bullocks. I think this disorder among pigs is one of the most interesting of the whole group; and I believe that if it were subjected, as opportunity occurs, to the test of experimental inquiry, results would come out that would not fail to be of the highest value to the agriculturist; whilst they would also possess great scientific interest in their bearing on kindred diseases in man of a far higher and a far wider range.

The Chairman said he had listened with very great satisfaction to the observations of Dr. Budd, and added that in his neighbourhood, in Berkshire, there had during the last few months been an immense mortality among pigs. The disease was of a most extraordinary character, and, from all he could learn, it developed itself without any premonitory symptoms, and carried off its victims, as it were, quite suddenly.

Dr. Budd believed it probable that the disease was sometimes mortal from the virulence of the poison, at so early a stage that, as in the case of smallpox in man, the patient died without throwing out the eruptions, so a certain proportion of pigs might die in the same way, before the local disease had had time to develope itself in its characteristic form.

Professor Wilson inquired how the red tinge in the cuticle about the ears, and those parts of the body which had little hair, was to be recognised in a black pig. He presumed the pig-dealers must have some means of detecting it even in that case.

Dr. Budd said, the ten pigs of which he had been speaking were not black, and he could not answer the question.

Professor Wilson.—Because, if that were one of the easiest modes of detecting the disease it would, of course, be most easy to the class of men who dealt in pigs.

Dr. Budd.—If there were prostration and diarrhœa, and the pigs died in rapid succession, it might at once be concluded that they had the disease.

Mr. Frere.—But would it not be possible to see the red colour in the black pig?

A Member.—Yes, you would see the inflammation of the skin.

Professor Coleman.—But a reddish tinge is very common with the black pig.

Professor Simonds said, that although attention had been more especially directed to this disease within the last three years, there could be no question that it had existed in a form unrecognised by medical men for a very considerable time. It was in the early part of 1862 that the attention of the veterinary profession, and of himself in particular, was

first called to this matter, in consequence of the virulence of the affection in the county of Berks. The first pigs he then saw were some belonging to Mr. Charles Cantrell, which would unquestionably receive the very best treatment from the time of their being born to that of their being sent to the market as pork; and he confessed that when he saw them he was completely taken aback, and scarcely knew what he was dealing with. He had never seen anything of the kind before; for although he quite agreed with Dr. Budd as to there being ulcerations in the mucous membrane, and chiefly in the larger intestines, still, in this instance, there was a great deposit in each membrane, and it was only by removing these deposits that he was enabled to see that there were any ulcerations.

Dr. Budd.—It was the same in my case.

Professor Simonds.—And these deposits were like fungi on a tree, or the scar on a horse's leg after the operation of firing, or slices of the columba root, alluded to by Dr. Budd. But they were to a far greater extent than any of these similes would convey to the mind. They existed to such an extent, indeed, as absolutely to obliterate the passage through the intestines, and more than one pig died, in fact, from a rupture of the intestines; for the feculent matter could not pass through the colon, in consequence of the amazing amount of deposit. Other pigs showed less of these characteristics, and in these instances the ulcerations were well marked, and chiefly confined to the large intestines. Very shortly after, he heard there were a great number of other pigs in the neighbourhood of Windsor that were the subjects of the disease; and as a very considerable number of pigs had died in the county that year, and he had observed the affection chiefly among Berkshire pigs, he began to imbibe the notion that they were more susceptible of the disease than others. Subsequent experience had shown him the fallacy of this conclusion, and he now thought there was no difference whatever with regard to breeds of pigs, all being, in his opinion, equally susceptible to the influence of the contagion. Suffice it to say, that from 1862 to the present time the disease had been extending throughout the whole country, and he did not know a single county that was not suffering more or less from the affection. Certainly it existed in all the southern, midland, and most of the northern counties, for he had seen animals from all those districts. It was for this reason that in the report of the Governors of the Royal Veterinary College to this Society last year the following paragraph was introduced:

"Although what may be called the established epizootics have been less prevalent, a peculiar disease, in the nature of diphtheria, has affected pigs in several parts of the country. This disease, however, has apparently passed its climax, and seems now to be on the decline. The sanitary measures recommended by the professor were attended with marked benefit, by keeping the malady in check, but further investigations into its pathology are required, and in this, as in other analogous cases, the governors invite the co-operation of the society."

He quoted that passage in order that it might be seen that the council had not only been alive to the existence and ravages of the disease, but had been exceedingly anxious to receive information and support from the various members of the society. The disease was there spoken of as being of the nature of diphtheria, and it was so described because he had found that the deposits upon the mucous membrane when seen in the early stages, bore a close analogy to the deposits which were seen in diphtheria. (*Dr. Budd*, "certainly.") And he did not see why in a diphtheroid disease those deposits might not be in any part of the intestinal track, as well as upon the fauces. In fact, the poison might exist in various parts of the body; and he made that observation because he had seen deposits on the pharynx, over the fauces, and upon the epiglottis, precisely in the same manner as in the human subject, again and again in pigs. This showed, at all events, that pigs were susceptible of that particular class of affections. With reference to the contagiousness of the disease he quite agreed with Dr. Budd, and further, he agreed that probably in dry seasons it was more contagious than in wet, and for the reason that Dr. Budd had explained. He found, however, that it was contagious as well in winter as in summer. (*Dr. Budd*, "True."), that it made as much progress in wet weather as in dry, and that pigs differed considerably in reference to their susceptibility to the affection. In his experience the disease rarely attacked aged pigs. It had in some cases spared all the old pigs on the farm, whilst it had swept off nearly the whole of the young ones. He could not admit, therefore, that the farmer ran the risk, when his herd of pigs was attacked, of having all his pig stock swept away. Animals that were upwards of six months old resisted the disease in a most remarkable manner. With regard to the means by which the morbific matter might be propagated, he thought it was most likely to be propagated through the medium of the atmosphere. Whether other agents might also be conductors of it he did

not know; but he came to the conclusion which he had stated from the circumstance that he had seen the disease existing upon hill farms where the country all around was open, and where there was no possible communication between that and other farms. He had seen it also among pigs that were kept in the best possible manner, and fed upon the best possible food, and that lay in houses that could not be termed pig-sties, but might really be called parlours for pigs to dwell in. The animals were washed two or three times a week to keep them clean, and the greatest care and attention were bestowed upon them; they were, in fact, treated just as they would have been if the owner had been going to send them for exhibition to a cattle show. This was a fact of some value; because it indicated, not only that pigs thus well managed were susceptible of the affection, but that no condition gave security to the animal; and especially was the fact of value when he contrasted it with another to which he would allude. In one of his visits to the country for the purpose of investigating the disease, he went to the neighbourhood of Henley-on-Thames, where he saw a number of pigs that were the subjects of the affection. They were chiefly young pigs that had been bred upon the farm, and of all the mismanaged animals he ever met with they were the worst. They were running about in the mud, and dwelling in places that were as filthy as any the imagination could picture. As soon as the young pigs had been weaned they were fed upon bran and water. Thus were brought into operation a number of causes that must tend to produce disease, and render the animals susceptible to the affection. But, curious to relate, in that particular instance, the disease was not more fatal than in the case of those pigs which had been managed in the directly opposite manner. It would appear, therefore, so far as his observation went, that with regard to susceptibility, it was not management, so much as age, that had to do with it; but why young pigs should be susceptible, whilst old pigs were not, he could not say. With respect to the character of the disease, he quite agreed that it was of the nature of typhoid fever; that was to say, it belonged to that class of diseases which were termed zymotic; and he also held that it had a close likeness to typhoid fever in the human subject. They were diseases of the same class, and the same family, and belonged to each other. They bore as strong a resemblance to each other as one fungus bore to another fungus; and though not identical, they were of the same nature. As to the duration of the malady, he was inclined to believe that

it ran its course far more rapidly in the pig than typhoid fever did in the human subject. (*Dr. Budd*, "Decidedly.") And further, that the disease might have its beginning and ending in the course of four or five days. (*Dr. Budd*, "Clearly.") When, however, they got the disease in that form it was not to be expected, on making a *post-mortem* examination, that large deposits would be found in the mucous membrane, or very extensive ulceration; but it would appear that the animals were killed by the large mass of morbific matter which had entered into their organisms. It was in those cases particularly that were seen the changes of colour in the skin, which became patchy—red here and red there, especially about the ears and the upper part of the neck, but also on the back and sides. In addition to that, it would invariably be found that the membrane of the eye was intensely reddened. Sometimes, too, though that was the rarer, the eye would be bloodshot. If a *post-mortem* examination were made, a patch of intense inflammation was likely to be found in the stomach as in the intestinal canal; and when that was observable, not unfrequently there would be a thin layer of lymph of a nasty, dirty, yellowish-white colour, spread over it, which if scraped off would disclose the presence of inflammatory action of the most intense nature on that particular spot. If the animal had taken a dose of arsenic, or some other mineral or highly-irritating poisonous agent, the inflammatory action could not be greater. Frequently, however, there were no deposits, and no apparent change in the mucous membrane; and as an example of this, he mentioned the cases of some pigs in Bedfordshire that had been well managed and had died in the early stages of the affection within the last month. Those cases were marked by effusions of blood here and there absolutely upon the capsule of the kidney, more generally on the serous membrane of the abdomen, and likewise on the left side of the heart; clearly showing that it was a blood disease, and that the contaminated blood had left its vessels and produced the petechial spots that had been described. Having observed the disease in that and the more advanced stage, and examined all the connecting links between the two extremes, he nevertheless felt that he had a very great deal, indeed, to learn with regard to the true pathology of the affection. He considered that it was allied to the typhoid fever, whilst analogous to and partaking of the character of diphtheria. The symptoms had been most accurately described by Dr. Budd; and it was important that farmers should early recognise its existence. There could be no doubt that in

many cases the animals showed indication of headache. They were ill at ease, and he had heard it said that as soon as they were attacked, there was a peculiar pricking up of their ears. In some instances they loathed food; and in all cases the appetite was fastidious, if it were not entirely lost. The breathing was not much disturbed, and the pulse gave no sign. But as a rule the body was very hot, indeed, particularly in some places, and usually, not invariably, the extremities were cold. At the commencement the bowels were constipated, whatever kind of food the animals lived upon. Later in the disease, certainly on the third day, diarrhœa supervened, and it was of a peculiar character. The feculent matter having passed off, the fluid discharged contained a quantity of broken-up lymph, which was of a dirty white, and proceeded from the scabs in the intestinal canal. With regard to the discoloration of the skin of the black pig, it was difficult to say, perhaps, when the vessels of the skin were congested; but if the skin was particularly hot and darker than ordinarily, he though it might be inferred that there was a determination of blood to the vessels of the skin. With reference to the duration of the disorder, he had never himself seen it protracted beyond seven or eight days. There was no doubt that it produced death speedily, and that, speaking generally, its duration was remarkably short. As to the spread of the affection from the pig to other animals, he did not think there was the least risk of that; for it was a singular fact, that science might one day light upon, though it had not done much at present, that there were certain victims to certain special poisons, and that a disease which would kill the ox could not be spread to the sheep, and the contrary. Regarding the means of preventing the affection, of course the sooner the disease was recognised and the animals subjected to it were got rid of the better. By that means a large source of mischief was cut off. Cleanliness could not be too strictly insisted on. The places where the pigs had been kept should be thoroughly washed, floors, walls, and drains; and no sound animals should be put there for weeks after the others had left. As a medical means of preventing the disease, he had found great benefit to result from the use of small quantities of a very homely remedy, namely, sulphur, on account of its antiseptic action. It should be put into the animals' food twice or thrice in the week, and sulphite of soda should be used on the alternate days.

Mr. Frere suggested that carbolic acid, being an antiseptic. might be useful.

Professor Coleman mentioned that he had been lately informed of three cases in which it had been used with advantage internally and externally.

Professor Simonds had had no experience of carbolic acid internally administered; though externally applied to diseases of the skin he had found it efficacious.

Dr. Budd wished to add that he believed this particular disorder was propagated chiefly by the discharges from the intestinal canal, and that persons who got the matter about their shoes were frequently the unconscious mediums of conveying the disease from one place to another. At present the complaint was very rife in the south of Ireland, and it was thence that vast importations of pigs took place into the port of Bristol.

A vote of thanks to Dr. Budd terminated the proceedings.

CATTLE PLAGUE.

Upon the question of the origin of the malady which is still steadily extending among our herds, there seems to be a reaction in the public mind. The outcry against the introduction of foreign cattle is varied by assertions to the effect that no cases have yet been traced to them, and that no foreign animals have been seized at English ports in consequence of this disease; and further, that the filthy condition of the cow-sheds in the metropolis is sufficient to have caused the disease in the London dairies, from which it has extended to the country. About this line of argument there is a certain speciousness which causes it to find favour with the multitude, and when seasoned with a little abuse, directed against those who take an opposite view, is generally received with approbation. Very little consideration, however, is required to prove the flimsiness of the basis on which these conclusions rest; for example, the statement that no foreign animals have been seized at English ports in consequence of the disease being found among them, whether true or not, is of no importance. Every one who knows anything of the system of inspection at ports must be aware how impossible it is for one man, amidst all the hurry and confusion of disembarking a cargo of 500 or 600 animals, perhaps in the middle of the night, to properly examine individuals; any of them that present decided symptoms of sickness, symptoms that can be detected as the animals pass by, are seized upon by the inspector; but as a matter of course, the early signs

of this or any other disease being detectable only by a careful and minute observation, cannot be discerned during the cursory inspection which is alone possible under the present system. Thus any number of animals having the disease in its incubative stage, or only indicating it by the first symptoms, such as loss of milk or dulness, which would certainly not be recognised in the excitement attendant upon the process of landing, might be passed; and be sent to distant parts before any decided evidence of the disease might present itself. That such things do happen is tolerably clear from the fact admitted, that these animals have shown the malady some time after landing; but by a strange perversion of reasoning, this circumstance has been adduced to prove that they must have taken the affection in this country.

The other argument, based on the sanitary state of the cow-sheds in the metropolis, has been advanced by certain medical men, who, however eminent in their own profession, are proverbially liable to error in discussing veterinary matters, or by non-professional men, whose ideas upon these subjects appear to be of spontaneous origin, utterly independent of logic or science. In the minds of those who are most accustomed to cow-sheds there is a keen appreciation of the fact that these habitations are in many instances quite unfit for a life-long residence for animals whose natural haunts are the fields and the mountain pastures. But are these sheds worse than they were a hundred years ago? Have the causes which induce typhoid diseases been steadily increasing, until the smouldering fire has burnt into a flame? It should be so to account for the sudden origin of a malady which has not visited our country for a hundred and twenty years; but, on the contrary, the opposite is true; however bad cow-sheds in general may be, they are better in every respect than they were; and so far from the disease being most rife where these assumed causes are present in the greatest degree, it has occurred and continues to occur in sheds which are models of perfection; and not only so but in open fields and extensive marshes in the healthiest situations. On the other side of the question it is in evidence that animals coming directly from the steppes of Asia have been brought to this country, and that soon after their arrival the murrain became rife, and has since extended, and is extending still, throughout the country.

Granted that the disease is only once landed on our shores, it must be admitted that cattle of all breeds may be exposed to infection, and thus the introduction of the malady to distant parts of the country may be the result of the passage of

Dutch, Irish, Scotch, or English animals who have accidentally been exposed to the infection. It is not necessary to trace a Russian ox or cow to every locality where the disease exists; so long as we can explain its introduction into the country, there is no difficulty in suggesting a variety of means by which it could be extended; setting aside, however, the question of how it came, there is no doubt of the fact that it is here, and we are mainly concerned for the present with the methods of preventing or remedying its evil consequences.

Medical treatment will occupy our attention shortly; but, save under very strict regulations, we have already deprecated its employment, for reasons which concern the public welfare; prevention, however, is in this matter so much better than cure, that we are constrained to give more than ordinary prominence to all propositions having this end in view.

Starting with an admission that general attention is to be given to ventilation, drainage, feeding, and cleanliness, we may proceed to the consideration of those points which particularly relate to the extension of the disease by contact, direct or indirect.

First. In reference to a healthy district: an absolute law should be established among agriculturists by mutual consent, not to purchase fresh store stock outside the boundaries of that district; certain practical difficulties will attend this system, but it is the only one which promises safety.

Secondly. In a district already infected, every precaution should be taken to prevent the moving of animals from place to place, all diseased stock should be isolated perfectly, and all the worst cases destroyed and effectually disposed of, so that there shall be no chance of their being employed for human food, or contaminating the air we breathe. All contact with healthy animals should be carefully prevented, even to the extent of prohibiting the same man passing from one to the other. The great evil we have to contend against now, is the travelling of diseased or infected stock along public roads from one part of the country to another. The Order in Council is specially framed to stop this; but it is extremely difficult to prevent chicanery where men are determined to consult their own pecuniary advantage in defiance of the laws, and to the injury of the best interests of the country.

In fairs and markets there will be much risk of infected animals being purchased, and where necessity compels the obtainment of stock from these sources, they should be kept quite apart from others for a fortnight at the least.

Marshes and common lands are especially awkward to manage in this emergency; but, so far as can be arranged, cattle should not be allowed to travel to and fro; and, in the event of the disease appearing in one herd, the rest should be directly removed and kept apart on their several owners' premises until a fortnight has elapsed. The diseased animals should, if possible, be temporarily isolated from their companions, or, if suffering from the worst form of the disease, at once killed and buried. The remainder of the herd is to be considered infected; but the animals may not show any indications of disease for some time, and while they remain healthy it is desirable to obtain the certificate of the inspector for the district, in order to send those of them that are fit for the butcher to the nearest slaughter-house. Owners of healthy stock will hardly need to be warned not to turn animals into unenclosed lands while the malady prevails, and to avoid exposing them to contact with any other animals as far as possible. Practically the suggestion to remove infected animals from unenclosed lands, particularly where they are of great extent, cannot be legally carried out in certain instances, because, in order to do so, it would be necessary to drive them through other herds and along public roads, to the great danger of healthy stock, and in contravention of the Order in Council; in such instances as these, there is no alternative but to destroy and bury on the spot all animals that are not likely to recover, and to make temporary arrangements for slaughtering and dressing all that remain unaffected by the malady. We do not advance this idea without being aware of the numerous difficulties that will have to be overcome, but no other more feasible plan occurs to us. As the case stands the animals must not be removed, they are therefore to be left to die, or some arrangement must be made for at once on the spot butchering those that are available for human food. The observation so constantly ringing in our ears, "it can't be done," should be suspended for the present as ill-befitting the mouths of those who have the onerous duties of an emergency to sustain.

The extensive use of disinfectants about strawyards and sheds where diseased cattle have been placed, must not be neglected, no manure or litter should be removed until after the disinfecting process has been properly carried out, and if convenient the loose litter should be burned; in many instances this will not be possible, and then a liberal sprinkling with chloride of lime must be had recourse to instead.

Considering how much the skin sympathises with the

disease of ths mucous membranes, it will be advisable to employ antiseptic solutions for the purpose of washing the surface of the body at intervals. No agent is likely to be more beneficial than carbolic acid, mixed with water in the proportion of one part of acid to 100 of water; Condy's fluid may also be used with advantage, but the tar products have proved themselves so effective as antiseptics in other cases that we are constrained to advocate their use.

During the past few weeks opportunities have occurred of observing the effects of treatment directed to the cure of this malady. Various methods have been adopted by different practitioners with various results, and next week we propose to offer to our readers an account of the proceedings that been instituted in different parts of the country; meanwhile adding a caution to the effect that the empiric alone offers a *specific*—no positive cure has been or is likely to be discovered. A certain system of treatment, based on the principle of supporting the animal while attempts are made to assist the elimination of the poison from the blood, has been apparently successful; we say apparently, because it must be remembered that about 20 per cent. of all the animals attacked will recover without any medical treatment at all; and therefore, in estimating the success of any remedial measures, these cases of spontaneous recovery must be taken into account.—*Agricultural Gazette.*

THE SIBERIAN CATTLE PLAGUE; OR THE TYPHOID FEVER OF THE OX.*

By William Budd, M.D., Clifton.

"AS IN A MIRROR."

"These contagious fevers are like Fire, very easy to put out when you have only to deal with the first spark: very difficult to put out when the spark has grown to a conflagration."—(*Letter from the Author to the Bristol Board of Health.*)

Man and animals are, alike, preyed upon by a great and fatal brood of specific diseases, which spread in the same

* The circumstances under which this little essay on Cattle Plague makes its appearance are so remarkable, that it may be well to say a word in explanation of them.

Every one reading the title, will naturally suppose that the essay was suggested by the recent outbreak of this formidable disease in England. This is not the case. The history of the essay is simply this. At the annual meeting of the British Medical Association, held at the Royal College

way, which destroy life by the action of the same powers, and which are so truly members of one family, that some among them are even common to animals and man, and pass, with their identity entire, from the bodies of the one to those of the others. Human smallpox and sheep's smallpox, glanders, hydrophobia, Asiatic cholera, plague, scarlet fever, yellow fever, the lung disease in cattle, and the great group of typhoid and typhus fevers, are but a few of the leading types of this great Army of Death.

As if to mark the poverty of our conception of their real essence, we think it sufficient to call some among them by the name of "fevers," an appellation derived from the Latin verb, *ferveo*—to be hot. "Plague" and "pestilence," words betraying the theological phase, which, according to M. Comte, characterises the infant state of all human knowledge, are the epithets applied to others.

Caused each by a specific entity, which, like the living types of organic nature, is endowed with that most significant of characteristics, the power to propagate its own species through indefinite periods of time; the law of propagation of one species may be applied to that of the others, with the same certainty with which we apply the law of propagation of one mushroom to that of another mushroom, or of one species of infusoria to that of another. To know the law of one of these contagions is, in fundamentals at least, to know it in the rest; to know the law of the animal fever is to know that of the human fever; to know the law of sheep's smallpox is to know that of human smallpox.

of Physicians, in August 1862, a resolution was passed, binding the Association to take up at once the study of epidemic and epizootic diseases. Shortly afterwards, I had the honour to receive from the Council of the Association a request that I should draw up a scheme for the conduct of the proposed inquiry. This I accordingly did; and a memorandum embodying my views on the subject was laid before the Association at the succeeding annual meeting held at Cambridge in August last year. In that memorandum, I mentioned rinderpest, or cattle plague, as a disease of which it would be in the highest degree important to study the laws, on account of the striking analogy presented by it to the typhoid fever of our own species. In accordance with this suggestion, a resolution was passed appointing me to the work; and this essay, which was read at Leamington on the 4th of the present month, is the result.

The materials for the essay itself have been derived chiefly from the following sources. 1. Professor Simonds's able 'Report on Cattle-Plague.' 2. Röll's 'Lehrbuch,' and the writings of the other chief German authorities. 3. The 'Report of the Russian Government Commission,' kindly lent to me by Professor John Gamgee. And, lastly, personal observation of the present epizootic in a recent visit made with that object to the Royal Veterinary College in London, and to an infected dairy in Marylebone.

How, and in what way, do these contagions swarm and multiply? Through what process do they thus perpetuate their species, from age to age, from country to country, and from race to race, through countless myriads of subjects? These are the great questions, or, rather, this is the one great question, for man to solve. All else—all clearness of view, all precision of aim, all certainty in practice—hang upon the answer to it. It is a question on which the history of the disease that is to form the subject of this report—the Rinderpest, or great Cattle-Plague of Siberia—throws the clearest light.

Definite in character; peculiar to a single species; having a period of incubation; occurring, as a rule, but once in life; specific in the highest sense of that word; and in its very essence a contagious fever—it is a perfectly typical member of that family of which human typhoid fever and human smallpox are familiar examples. Known to tradition from the remotest times, it is the same now as it was at first. Bearing the closest family resemblance to human typhoid, it can be inoculated like smallpox, and the mode of its propagation determined by the most decisive of experiments.

The Steppes of Siberia, in which it appears to have first come into being, are still its great stronghold. Somewhere or another in that wide area, which looks so blank on our maps, now in sporadic, now in epizootic form, it is always present. In these wild wastes, this fell disorder works its will on the hapless and unconscious cattle, unchecked by veterinary police or sanitary reformer. There is no Farr there to point, in words of real wisdom, the moral of pestilence; no Chadwick to preach a crusade against bovine stinks; no Florence Nightingale to teach physicians that contagion is an antiquated myth; no Murchison to commit himself to the hopeless task of showing that, although essentially contagious, this typhoid fever of the ox is caused, for the most part, by putrid fæces, or, in one word, is a pythogenic fever.

The one thing needful for prevention—separation of the infected from the healthy—being impracticable, the disease in the Steppe is, with few exceptions, left to its own course. Happy if its ravages always ended there. Like all other contagious disorders, it possesses, in virtue of the terrible gift of communication, the fatal and characteristic power of migration.

Trade and war, those two inexorable tyrants, are the chief agencies by which it is disseminated. In the course of ordinary traffic, vast droves of cattle annually leave the Steppe

for the markets of the west. Too often these droves carry with them the germs of the scourge. So prolific are these germs, and with such rapidity do they multiply, that, from a single case of cattle plague, great outbreaks often spring, which, in a few months, spread over whole principalities, and count their victims by tens of thousands.

A circumstance of the deepest scientific interest, to which I shall hereafter refer, helps, at first, to disarm suspicion, and to allow infection to steal unheeded, far and wide, through the land.

The Danubian Provinces and the eastern parts of Austria are generally the first to suffer. To keep the great cattle plague at bay is at all times an object of national concern with the Austrian Government. Silesia, Podolia, Galicia, Moldavia, and Wallachia, are the seat of periodical outbreaks of it, which sweep away myriads of oxen.

In time of peace—by strict military cordon, and other measures directed solely against contagion — Prussia succeeds, to a great extent, in keeping the pest from her borders, and stands as a barrier between it and the North of Europe.* That it is by these measures, and by these alone, that the disease is excluded, is shown by the fact that, in time of war, when they can no longer be enforced, cattle plague has more than once invaded Prussia also, and has spread far and wide through the north and west. In modern times the results were first seen, on a large scale, in the wars of the first French empire.

In 1811, this epizootic, following in the track of the Austrian wing of the Allied Armies, was sown broadcast through Germany and the North of Europe, and brought to the walls of Paris.†

For the first time on record, the French, in addition to their other calamities, had the bitterness of seeing their herds destroyed by an epizootic which was as deadly as it was entirely new to their experience.

In the Crimean war, a similar chain of events occurred. Rinderpest, breaking out in the droves which issued from the Steppe to feed the Russian armies, spread widely through Moldavia and Wallachia, overran the Crimea, and, being carried from Turkey to Egypt (where, if I am rightly informed, up to that time it had remained unknown), committed, in the two succeeding years, ravages which almost

* See 'Report on Rinderpest,' by Professor Simonds.

† See Professor Simonds's 'Report,' and a report of a recent debate on typhoid fever in the French Academy of Medicine.

threatened to exterminate the cattle tribe in the valley of the Nile.

Contrast with this striking history the equally striking fact, which is complementary to it, that over wide tracts of the earth's surface—that in a great part of Europe, for instance, and over the whole of America, North and South, this disease is still unknown; and from these few salient traits the great truth already begins to emerge with a clearness which leaves nothing to desire, that we are here dealing with a contagion which no common contingencies of cattle-life, either single or combined, whether of breed, climate, country, fodder, or what not, have the power to engender, but for whose production the presence of the contagious germ is at once the necessary and all-sufficient condition.

The scale on which this scourge operates as a life-destroyer is truly enormous. In Europe, exclusive of Siberia and Tartary, it is computed to have carried off, in the last century, more than 200,000,000 head of cattle. In Germany alone, during the same period, 28,000,000 oxen are said to have died of it. By the very general and vigorous adoption of measures directed against contagion, although it has since been held somewhat in check, the aggregate mortality from this epizootic is still gigantic.

Until quite recently—with one single exception—unknown to us here—in its own home only known by its effects—subtle and invisible, like all the rest of its class, this morbific agent is nevertheless, as we see, a great power in Nature.

If we now come to scan more closely its mode of operation in the living body of its victim, remote from our experience though the case may be, we find ourselves at once on familiar ground. All the great relations which observation has taught us to look upon as essential characteristics of the fevers of man at once come into view in this fever of the ox.

First, let us note, as cardinal, the occurrence of a well-defined period of incubation. Caused, like typhoid fever and smallpox—and, indeed, like all the contagious fevers—by a specific *materies morbi*, which acts only by its own growth and multiplication, the morbific germ is too minute on its first introduction to exert any sensible action on the living economy. No matter how this germ finds its way into the body, whether in the natural way or by inoculation, from five to eight days always elapse before the patient gives any token of disorder. As we might have expected, from the more rapid course of the disease itself, the latent period also is considerably shorter than in the two human fevers just quoted.

The actual onset of the disease is marked by the constant

and well-known signs of violent disturbance which usher in all the contagious fevers. Rigor or shivering, followed by an increase in the temperature of the body, frequent pulse, and sudden prostration of the powers of life, are the leading and familiar signs. The coat is stark; all fodder is refused; and at the end of a few hours, at most, rumination finally ceases. The poor plague-stricken ox, standing with its back arched, its head hanging down, its ears lopped, and its legs gathered under the body, presents, to those who know how to interpret such signs, an unmistakable aspect of grave illness. Transient quiverings of the muscles, especially about the neck and shoulders, betray already the severity of the nervous disturbance. The animal looks dull and dispirited; is reluctant to move; and, when made to move, often staggers from weakness. In the milch cow, the secretion of milk at once ceases.

In some few cases, the bowels are at first torpid; but in the great majority, in the course of a few hours, or on the second day at the latest, diarrhœa sets in; and the discharges, becoming more and more profuse, and at last dysenteric, plainly show on what surface the malady finds its chief outward development. The evacuations are more or less fluid, of a dirty yellow—sometimes blood-stained; have a peculiar sour smell; and, on minute examination, are found to be charged with flocculi derived from the diseased intestine. As the drain from the bowel proceeds, the loss of power makes rapid progress. The tail has lost its native function; and, in summer-time, flies, busy in their work of petty torture, swarm upon the hide, undisturbed by that once lively member.

In malignant cases, the discharges become involuntary, and the raw and fretted vent is often entirely prolapsed.

At an early period—sometimes, as I have myself seen, at the very outset—a mucous fluid weeps in abundance from the eyes and nostrils. Transparent at first, this mucus soon becomes laden with whitish flakes, and at length is entirely opaque. As the disease advances, this ill-conditioned stuff stands in viscid pools beneath the head of the patient. With the extension of the catarrhal condition to the throat and windpipe, cough sets in, and the breathing grows more or less hurried and embarrassed. Under these circumstances, the act of breathing is attended by a peculiar rough moan, which has appeared to myself to be very characteristic.

The temperature of the body, which at first was uniformly higher than natural, is now unequally distributed; so that, while the mouth and roots of the ears are still hot, the tips

of the ears and the extremities often have a death-like coldness.

With failing strength, the animal finally loses its legs; and, lying with its head hanging back on its shoulders, recalls to mind that look of abject prostration which is so familiar to us in the typhoid fever of our own species. As life ebbs away, the belly becomes distended; the limbs are agitated by involuntary twitchings;* and in some cases the back and loins crackle when pressed, from the extrication, while the animal is yet living, of putrid gases in the areolar tissue.

When things have come to this pass, the breathing becomes rapid, its rhythm irregular; and, the temperature of the body falling from hour to hour, the sufferer soon sinks.

This is the usual course of the disorder, when it affects a malignant form. In watching a series of cases, some variation in the type is observed, according as the catarrhal or the abdominal symptoms take the lead. Still wider variation depends on the greater or less rapidity with which the malady runs its course. As in all other contagious fevers, this varies much. As applied to the slower cases, the description just given would be too highly charged.

On a recent visit to London, I saw two cows, one of which had been ill eleven days, while the other was in the tenth day of a relapse following an attack which occurred six weeks before. Both were the subject of severe diarrhœa; in both there was profuse discharge from the nostrils; both were suffering from difficult breathing, attended by the peculiar moan I have before mentioned. But these two cows were still on their feet; and, on being led out from the shed in which they were housed, to be taken away in a cart, both walked pretty briskly, and with a tolerably sure tread. And, although both were, I believe, doomed to a certain death, few persons, on seeing the disease for the first time, would have supposed, judging from the aspect of these animals, that it is the malignant thing it is known to be.

In all this there is, unfortunately, nothing very distinctive. We have not to do here, as in sheep's smallpox, with an outward eruption which at once challenges the eye, and whose nature cannot well be mistaken. But even in cattle plague, with a little attention, the diagnosis cannot remain long in doubt.

It will be seen presently that the one characteristic of the

* My friend Professor Simonds writes to me to say that these and other nervous phenomena are not so highly developed in the present epizootic as in the cases he saw in Galicia.

disease is a species of internal eruption profusely scattered over the intestinal canal and air-passages. This eruption is the source of the discharges from these parts. When, therefore, we see an ox or cow suddenly seized by a fever characterised by great prostration, and by peculiar discharges from the bowels and nostrils, the presumption is already strong that the case is one of cattle plague.

The rapid death of the patient, and the extension of the disease to other oxen that may have come into contact with it, will soon remove any remaining doubt, if doubt there be.*

Of the various characteristics of this malignant epizootic, two of the most striking, and which are, no doubt, mutually related, are its extreme deadliness on the one hand, and the rapidity with which it kills on the other. In the majority of fatal cases, death ensues between the third and fifth days; and sometimes occurs, it is said, as early as the second.

Measured by the mortality it occasions, the virulence of the disease is equally striking. Among the native cattle of the countries which lie west of the Steppe, ninety deaths in one hundred attacked is not an uncommon average. In the Steppe oxen, in accordance with what appears to be a general law, the disease is much milder and much less fatal. The mortality here often falls as low as 25 per cent. This is the circumstance to which I before referred as helping so much, by laying precaution asleep, to spread the plague.

The disease, from its comparative mildness, being less characterised, is not detected; and infected Steppe cattle, travelling the roads and standing in fairs and markets, sow

* In order to make this part of my essay complete, I subjoin Professor Simonds's description of the complaint, as communicated to the Privy Council, in a letter published in the *Times* of August 7th, 1865. This description, as being drawn by a master in the art, from a much wider field of observation, is, no doubt, more trustworthy than any description I can pretend to give.

"The early symptoms of the disease are usually a remarkably dull and dispirited condition of the animal, which will stand with its head hanging down, ears drawn back, and coat staring, refusing all food, and occasionally shivering. A watery discharge flows from the eyes and nostrils. The skin is hot, but sometimes chilly, the temperature varying from time to time. The extremities are cold; the breathing short and quick, being not unfrequently accompanied with moaning as an indication of pain. A slight cough is sometimes present. The inner part of the upper lip and roof of the mouth is reddened and often covered with raw-looking spots. The bowels are occasionally constipated, but in most instances diarrhœa soon sets in, the evacuations being slimy and very frequently of a dirty yellow colour. The prostration of strength is great, the animal staggering when made to move. In milch cows, the secretion of milk is rapidly diminished, and soon ceases altogether."

the fever far and wide before its true nature is recognised. The fact is interesting, not only as showing how various and how incomparably subtle are the conditions which determine the degree of power with which the morbific cause acts on the living body, but because this is only one example of a general law. As far as I know, there is no exception to this —that contagions which are at once wide-spread, and take effect through the blood, are, *cæterus paribus*, invariably more virulent in races, whether of men or animals, new to their action, than in those which have long been subject to it. When sheep's smallpox was introduced into Datchet some seventeen years ago, it was observed to be greatly more virulent and more fatal in the English flock of the infected homestead, than in the lot of Merinos which brought the infection from Denmark with them. In Wilts, in 1862, this disease caused a mortality among the native Southdowns for which no parallel can be found in continental outbreaks. Human smallpox was much more fatal on its first introduction into Europe than it is now; and, on passing from us to America, it was again incomparably more deadly to the races it found there than to us, who for many generations, then, had been scourged by the pest. From ancient records, it is plain that syphilis was far more virulent when first brought to Europe than at present; and, if we want to reproduce the picture it presented then, we must go for it to the races to whom the unbridled lust of Christian Europe has, for the first time in their history, communicated the loathsome taint.

I have elsewhere pointed out that, all else being equal, the degree of malignity of contagious poisons is due to the degree in which they multiply in the living body. Smallpox, when the inoculated germ has only fructified into some six or a dozen pustules, is a slight indisposition. Smallpox, when the whole skin is a confluent mass of variolous poison, is a deadly plague. To say that cattle plague is milder in the Steppe cattle is, therefore, to say, in other words, that the poison is less prolific in their bodies than in those of untainted breeds.

What can be the possible explanation of this enigma? Why, because, their progenitors have for many ages been the subjects of a specific contagion, should the heirs of these subjects furnish a less fertile soil for its reproduction? This is a problem on whose discussion I have no time to enter now.

About two years ago my brother, Dr. G. Budd, offered, in a short paper in the *British Medical Journal* some specu-

lations on it which have not, perhaps, attracted the attention they deserve. How far these speculations may be sound, I will not undertake to say; but, in their bearing on the apparent diminution of the protective power of vaccination, they have at least the merit of showing how momentous are the practical questions, even, which hang upon a true view of these subtle relations.

If, in studying cattle plague in the living ox, we have met with nothing, in the way of morbid phenomena, new to our experience, the morbid changes revealed by the dead body affect a form with which we are still more at home. While the phenomena of the malady itself stamp it as a contagious fever, its anatomical characters leave no doubt as to what particular type of fever it belongs. The one and only anatomical change characteristic of it is, in fact, the very "counterfeit and presentment" of the one morbid change which is equally characteristic of the typhoid fever of man. In general terms, it may be described as a specific disease of mucous glands, which, beginning with a peculiar cell-growth and issuing, for the most part, in ulceration, culminates in the follicles, isolated and clustered, of the small intestine.

The human disease is much less wide-spread and altogether less profuse—for the most part including, indeed, only the tract from the fauces to the rectum; whereas the corresponding disease of the ox always extends to the nostrils, and is often found in the air-passages of the lungs also. But this is a difference of degree, and not a difference of class.

In its early stage, the diseased follicle in the ox is the seat of an exudation or cell-growth, which, occurring amid all the phenomena of acute inflammation, and rapidly pervading the whole substance of the follicle, emerges on the surface of the gut, in the form of circular patches several lines thick, and of a pale yellow or yellowish-brown colour. Sometimes, the material of these patches is soft like cream or soft cheese; at others, compact and firm. More or less adherent at the centre, their edges are always loose. When they are removed by gentle traction, the membrane underneath is found to be slightly depressed, of a deep red, beset by numerous oozing blood-points, and fretted with minute ulcers. In this stage the diseased follicle, with the exception of being more turgescent and more inflamed, presents a striking resemblance to what the French have called *plaques gauffrées* in the typhoid fever of man.

In Peyer's patches, the morbid process generally begins, precisely as in man, in many points at once, which go on multiplying until the whole patch is invaded.

In other cases, the disease affecting what, without metaphor, may be called the confluent form, lines the whole surface of the gut, sometimes, it is said, for many feet, with a continuous layer of the same material; the whole presenting an appearance which strikingly calls to mind what sometimes happens in human dysentery. As the fever proceeds, countless flakes of this peculiar morbid matter may be found, by minute examination, in the discharges from the bowel. Where the mucous membrane has been thus laid bare, ulceration succeeds, and is often carried to great lengths.

The isolated and clustered follicles, instead of being covered by an adventitious coat, are now the seat of deep excavations. In some cases, principally in ill-nourished beasts, the ulcerative action takes the lead to such an extent that the mucous membrane, over a space of several feet, even, is entirely destroyed, and the underlying cellular or muscular coat laid bare.*

Regard being had to the natural difference of proportion, I have often seen a precisely similar result in the typhoid fever of our own species.† To complete the parallel, it is only needful to add that the mesenteric glands in physiological connection with the diseased parts are, as in human typhoid, invariably swelled and inflamed.

I have already said that the affection here described reaches its height, and presents its most typical form of development in the isolated and agminated follicles of the small intestine. Far, however, from being confined to these, it is in many cases repeated, in less degree, in the follicles of the whole intestinal tract.

In the subjects which fell under the observation of my friend Professor Simonds, when sent into Germany by our

* This description of the morbid anatomy of rinderpest has been drawn in its main features from Röll's 'Lehrbuch,' from the 'Report of the Russian Government Commission,' and from the able 'Report by Professor Symonds,' already referred to. One or two additional traits have been added from notes taken during the present epidemic, and from drawings of the local disease in my own possession. The description itself appears under the disadvantage which necessarily attaches, in greater or less degree, to all descriptions which are founded chiefly on written documents. I have, however, taken every pains to make it as accurate as I can; and if I have not succeeded in this aim, the fault lies rather with the authorities I have consulted than with myself. As far, however, as the pathological interpretation of the facts is concerned—and that is the essential point—I feel myself on perfectly sure ground.

† It will be readily understood that many of these alterations are only found in protracted cases. When the disease kills rapidly, there is not time for all this structural havoc. In many cases, the local disease has not gone beyond the stage of exudation before death ensues.

Government to report on cattle plague, the local disease predominated in the large intestine. This, however, seems to be contrary to the general rule. According to Röll—and the statement appears to be borne out by the majority of individual *post-mortem* accounts*—the colon is, in comparison, but slightly affected. An erythematous condition of its mucous membrane, with traces of excoriation here and there, especially in its lower part, are often the only morbid appearances. In other cases, the follicles of this intestine are more or less thickly beset with patches of the characteristic morbid material already described. In others, again, as Professor Simonds has observed, this section of the intestinal canal seems to bear the chief brunt of the disorder. It is interesting to observe that, in exact accordance with what happens in man, a thick clustre of these patches is often seen in the cæcum, and a corresponding cluster in the rectum also.

In the opposite direction, the disease repeats itself more or less profusely, more or less sparsely, in the mucous follicles, from the jejunum to the fauces and the hard palate inclusive.

Less profusely, on the whole, but scarcely less constantly, the same morbid process, with all its specific and characteristic features, is found on the mucous membrane of the air-passage also.

I show here a very beautiful drawing of the disease as it occurs in the windpipe; and you have only to compare this drawing with that taken from the ileum of the same subject, to see at once that, in these two parts, the morbid process is identical.† For reasons which will appear in the sequel, it is important to note, that the lining membrane of the nostril is, in the majority of cases, affected in the same way. The flakes of concrete lymph, as, in the old phraseology, the product is called, which abound in the nasal discharge, have, like the precisely similar flakes seen in the discharges from the bowels, their source in exfoliation of the morbid matter, which is the common and specific basis of the local affection in both parts.

In order to appreciate the true significance of the peculiar morbid process which I have here attempted to describe, it is only necessary to add, that this process is the one and only specific mark which Rinderpest or cattle-plague leaves in the dead body. Suppress it, and there is nothing to distinguish the carcase from that of oxen dead from many another cause;

* See, for a considerable number of these, the 'Report of the Russian Commission.'

† These drawings were executed for the author by Dr. Carl Heitzmann, of Vienna, expressly to illustrate the essay.

show it, and the disease is at once distinguished from every other to which the ox is liable. Other alterations there sometimes are, in the kidneys and lungs especially; but they are only alterations common to this and other contagious fevers, and therefore of no specific value. There is this qualification, however, as to the lung. As the bronchial tubes, as well as the windpipe, are often severely affected by the specific morbid process, their branches become choked by the resulting morbid products, and more or less extensive collapse of air-cells ensues. This change was very conspicuous in a lung which I lately saw at the Royal Veterinary College. When this bronchial eruption is severe, the whole bronchial membrane is highly erythematous; and catarrh and its concomitants, both in the living and in the dead animal, come to form a marked feature of the case.

The condition of the kidney closely resembles that which is seen in many human contagious fevers associated with acute albuminuria in the living subject. The general dropsy which Dr. Whitmore has observed in one or two protracted cases, probably had its root in this renal affection.

Even in what is absent, there is a striking agreement between this fever and other fevers of the same natural group. For instance, there is the same absence of disease in serous membrane, and, with great disturbance in function, the same striking absence of overt anatomical change in the nervous centres, on which Louis has justly laid so much stress as among the leading negative characters of typhoid fever in man.

With these data before us, there can be no difficulty in determining what is the true nature of the remarkable pathological change we have here been studying, or to what human malady we must go for its counterpart.

As I suggested at the outset, and as you have, no doubt, yourselves already inferred, this affection is the exact analogue of the precisely similar affection of the same parts which is so well known as characteristic of the typhoid fever of our own species. Developed in the same structures; alike in distribution in all general features; following the same law of evolution; beginning in a new cell-growth, and issuing in ulceration; attended by concomitant inflammation and swelling of the associate lymphatic glands; and, lastly, each the one and only specific mark of a contagious fever, it is beyond the possibility of doubt, that these two typical affections are exact pathological equivalents.

The same conclusion may, indeed, be arrived at in a more summary way. The case is, in fact, one in which what

Mr. Lewes calls the Principle of Vision in philosophy may be confidently appealed to without any risk of our being misled by it.

In the actual view of the morbid change, the conclusion at which we have here arrived, as the result of laborious analysis, starts at once to the mind. It is impossible, I think, to compare this drawing of diseased Peyer's patches in cattle plague with a good drawing of the same patches in human typhoid, without seeing at once that we are looking on phenomena of the same order. And let it be particularly noted, that this is no illusion to be traced in any way to the hand of the artist. In the dead body, the resemblance between the two things is so striking that, as we shall see further on, morbid anatomists from one of the great German schools were, on a memorable occasion, so far deceived by the aspect of the disease, as to believe the two affections to be, for all practical ends, identical.

But if these two forms of disease be exact pathological equivalents, the true significance of that which belongs to man has already been determined.

In a series of papers which appeared some years ago in the *Lancet*, I showed, by considerations which have never been controverted, that the intestinal affection of human typhoid fever is, in reality, as Bretonneau long ago suggested, neither more nor less than the specific eruption of a contagious fever. So that, while the follicular disease in the epizootic is the exact equivalent of that of typhoid fever, this last is, in its turn, the exact pathological equivalent of the eruption of smallpox.

In the disease of the ox, the truth of this doctrine receives at once a new illustration and its crowning proof. For not only can all that was said in favour of it, as applied to human typhoid, be repeated here with equal force; but, as we shall presently see, the follicular disease in cattle plague is absolutely proved to be the exact analogue of the variolous pustule by the decisive fact, that matter taken from it may be used, like smallpox matter, for the artificial propagation of its own fever by inoculation.

With this fact, the chain of induction is complete. Sure in every link, it is as simple and severe in its logical coherence as it is momentous in the practical consequences to which it directly leads.

I have said that certain continental anatomists were led by the first aspect of the intestinal disease to pronounce it to be practically identical with that of the typhoid fever of man. It is well known that, in the same way, the late Dr. Gregory,

on seeing for the first time the eruption of "variola ovina," was so impressed by its striking resemblance to that of human variola, as to fall into the mistake of believing the two to be one.

All four being, as we have seen, facts of the same order, the relation between the last two illustrates, in the most exact manner, the relation which the first two bear to one another. What variola ovina is to human variola, that precisely is this typhoid fever of the ox to human typhoid—not identical in either case; not intercommunicable; essentially different in species, but so nearly related as to admit, on a superficial view, of being confounded each with its counterpart.

It is, as I said, when speaking formerly of sheep's smallpox—and I can find no better illustration now—it is "as two kinds of thistle, as one sort of mushroom to another sort, or as two species of algæ, like almost to identity in looks and outward guise, identical in all their laws of growth and being, but yet specifically different." It is, in fact, in this close relationship that the scientific interest of this remarkable epizootic specially lies for us. For, whereas in sheep's smallpox and human smallpox we have experimental types which give us the power of determining with all the force and clearness which characterise the results of experiment, the laws of that group of contagious fevers in which the newly formed virus is projected on the skin; so we have in cattle plague, also, an experimental type, by which to determine by the same rigorous and decisive method the laws of that equally important and strictly correlative group in which the newly formed virus is projected on that other part of the living surface which is constituted by the mucous membranes; a group of which the typhoid fever of man is so conspicuous an example.

Having finished what I have to say on the morbid anatomy of rinderpest, it is time to speak a little more in detail of the great master fact which is the key to all the rest—I refer to the cardinal faculty which, in common with smallpox, human typhoid fever, and others, this animal fever also has of spreading by contagion.

One of the most important of the characteristics of the contagion of cattle plague, is the almost unerring certainty with which it appears to take effect. When this disease is once introduced into a farm or homestead, nothing short of the instant slaughter of the infected subjects, and the destruction of all exuviæ from them, seems to give any certain security in preventing its extension to the whole

stock. Cattle of all ages, of all races, and in all degrees of what is called "condition," appear equally liable. To have had the disease once before, is the only circumstance which constitutes an immunity from it. In many instances, the oxen in direct relation with the first sufferers are not alone attacked.

In various ways, and through a great variety of media, the disease is often conveyed to neighbouring farms. Among the most efficacious of these media are the hides, the horns, and the hoofs of diseased beasts. Not that the fact is any certain proof that these parts are contagious by their own power. Largely tainted as they must necessarily be by what, in one form or another, is cast off by the internal specific disease, it is probably to this taint that they are chiefly, if not entirely indebted, for the part they play in sowing the pest. It is most likely in virtue of germs derived from the same pathological source, that men, oxen—themselves uninfected—horses, sheep, dogs, poultry, and other animals, domestic and wild, often fulfil the same function. Flooded with intestinal and other discharges as the places are where the sick cattle are kept, it is easily intelligible that persons visiting them may carry away in their shoes and in other ways enough of infection to taint the soil of distant places. In this way neatherds, farriers, sanitary inspectors, and lastly, farmers, curious about the new and fatal pest which has stricken their neighbour's cattle, may often become, as on the continent they are known to be, unconscious bearers of it.

(*To be continued.*)

Translations and Reviews of Continental Veterinary Journals.

By W. Ernes, M.R.C.V.S., London.

ACTION OF THE OIL AND WATERY EXTRACT OF LOLIUM TEMULENTUM (DARNEL GRASS) ON THE HORSE AND OTHER ANIMALS.

By M. C. Baillet, Professor of the Imperial Veterinary School at Toulouse, and M. Filhal, Director of the Medical School at Toulouse.

Second Part.

(*Concluded from p.* 461.)

On the 14th of January, 1864, a blind gelding of middle size, about ten years old, was selected for this experi-

ment. Except being blind, the horse was in good health, the respiration being from 6 to 7 and the pulse 36 in the minute. At five minutes to ten o'clock the aqueous extract of four kilogrammes of the *lolium temulentum*, well filtered, was injected into the jugular vein; immediately after the injection, which had been done very slowly, the animal was somewhat agitated, it shook itself repeatedly, and pawed with the left fore foot, made several attempts to lie down, and turned its nose to the left flank. On the whole it behaved like an animal affected with slight colic; at the same time there were tremblings of the muscles at the elbows, stifles of the lips and the ears; the beatings of the heart were stronger, and the pulse was from 97 to 107 per minute, the respiration was profound, but not accelerated. After having been thus agitated for a few moments the animal became calm, and remained quiet, with its eyes half closed. There was only a little tremor about the lips, but the horse continued turning its head, sometimes to the right flank, at others to the left. Half an hour passed without any new phenomenon being added to those we have noticed; but shortly before eleven, an abundant salivation set in, so abundant, indeed, that it dropped out of the mouth, which the animal moved about the better to get rid of it. Trembling, also, set in, first partially, and confined to certain regions only, but it soon became general, and suddenly acquired great intensity. Thus tormented by these tremblings, which seemed to surprise and disquiet the animal for a short time, it began to stamp with its feet, but shortly after it became quiet again, and stood with its back arched, the feet placed together under the centre of the body, and the head and neck extended as if there had been difficulty of breathing. On attempting to move it the walk was performed with great difficulty and reluctance; he was very unsteady, the hind legs dragged as if affected with paraplegia. Exercise did not lessen the tremblings, which continued with great violence for more than an hour. A few minutes after twelve o'clock the state of the animal seemed to be ameliorated, the tremblings were less violent, the locomotion was freer; but now another symptom manifested itself, the eyes began to weep, and so much so, that at times the tears fell to the ground in big drops, the same as the saliva, which secretion had not diminished in the least. The pulse was less accelerated, being only 78 beats per minute. From half-past twelve to two o'clock these symptoms became gradually less intense, until they disappeared altogether. From that time the animal remained in a marked state of somnolency; it stood up, hanging back from the

manger as far as the halter-rein would allow; the head held low, the eyes half shut, still weeping, and insensible apparently to surrounding objects; the salivation, though not so abundant as at first, still continued, and from time to time caused deglutition; the respiration was slow and deep, the pulse, explored at divers times, was decreasing in its number of beats, and ranged from 79 at first to 54 at last. At night the animal was left in the above-described state, with the anticipation of finding it quite recovered in the morning; but this anticipation was not realised, for at half-past seven it was found dull; could only move with difficulty; an œdematous swelling had formed under the chest, which extended to the umbilicus and descended on the left side to the knee; on the right side it only invaded the upper part of the leg. This swelling rendered locomotion very difficult, and it was painful on pressure, particularly on the inside of the legs. The animal had not touched the food which had been given to him the night before. A few oats were now offered, of which it took a mouthful or two, which it began to masticate slowly, but soon ceased and left the remainder untouched. The mouth was hot, the visible mucous membranes were injected, being almost of a purple colour; the artery hard, and 90 pulsations in the minute, the beatings of the heart strong; the respiration, however, was not increased, but was deep, and at every inspiration the nostrils were strangely dilated; the back was stiff, and did not yield on pressure; there were slight tremblings of the legs, the neck, and the head, and the animal frequently turned its nose to the flanks. No modification was perceived in the state of the animal during the 12th, except a slight epistaxis towards twelve a.m.; and about three p.m. the animal, which had not staled since the morning, now voided a quantity of thick urine of a dark colour and strong smell. On the 13th, at seven in the morning, the state of the animal was more alarming than the evening before; the swelling had extended under the abdomen and the right fore-leg, the pulse was small and quick, the beatings of the heart were still strong, and the respiration accelerated. At half-past nine the animal, which had not lain down since the commencement of the experiment, let itself down at last on its right side. From that time it did not cease to knock itself about in violent convulsions, uttering plaintive grunts. He died during the night of the same day. The autopsy was made on the 14th. Under the skin, at the swellings, there was abundant effusion of a citron-coloured serum; the mucous membrane of the right side of the stomach was of a reddish-purple colour;

the subjacent cellulary tissue was partly infiltrated with blood; the mucous lining of the first portion of the small intestines was of a pale gray or slaty colour, under which were seen numerous blue ramifications of the veins distended with blood; further on the coats were found to be thickened, the same as in some intestinal congestions; the mucus assumed a purple tinge, and the subjacent tissue was, like that of the stomach, infiltrated with blood—the blood distending a network of veins was distinctly seen; the whole length of the small intestines showed the same alterations, only interrupted from distance to distance by certain portions of it, of a greater or less length, assuming the slaty colour and other characters which were found in the duodenum. It was in the last of the small intestines, ending in the cæcum, where the alterations were most marked. The mucus of the large intestines was of a gray slate colour, having a greenish tinge; there were only a few spots of a red purple colour at the point of the cæcum and the origin of the fluting portion of the colon; the liver was gorged with blood; a quantity of black blood was abundantly effused in the divisions of the vena porta; the kidneys on being cut into emitted a quantity of black blood; the veins which ramify on their surface were also distended with blood, and the renal arteries were nearly empty; the lining membrane of the ureters was of pale-gray colour, that of the bladder of a dark purplish-red, and in the cellular tissue underneath were seen numerous veins distended with blood; the bladder contained but a small quantity of urine; the peritoneum was of a red-violet colour, and that portion which covers the viscera and forms the omentum and mesentery was either of the same colour or of a rose-coloured hue; all the mesenteric veins were distended with black blood, which extended to even their smaller ramifications; at certain points of the mesentery the blood was extravasated between the coats, where it formed a thick layer, constituting a black mass of from six to ten centimètres in length; close to the apex of the cæcum there was an effusion of serum of a citron colour in the cellular tissue. In the chest was found a quantity of yellow-coloured serum. The lungs were healthy; the right lobe, corresponding to the side on which the animal lay at the time of death, was gorged with dark coloured blood.

Imperial Academy of Medecine.

Meeting of the 29th of August, 1865. President, Mons. Bouchardat.

THE CONTAGIOUS TYPHUS OF HORNED CATTLE IN ENGLAND.

M. H. Bouley said that a most destructive epizootic has prevailed in England since the middle of July, and the Minister of Agriculture did me the honour of sending me on a mission to study it on the spot. This mission I am still employed in fulfilling, and I am only in France on private business; but as the academy is desirous of being informed of the results of my first investigation, it is incumbent on me to satisfy this desire, and I can fulfil this task the more easily as the facts of which I have to speak are at present of public notoriety. A fortnight ago, when I arrived in England, great incertitude prevailed in France from what appeared in the English journals, as to the nature of the disease. The first orders which emanated from the Privy Council seemed to lead to the supposition that they were ignorant of the nature of the malady they had to deal with. However, Professor Simonds, of the Royal Veterinary College, was not at all deceived on that point. Twelve cows had been suddenly attacked at a dairy by a strange malady, and it was believed that they had been poisoned.

Professor Simonds was consulted, and he recognised the certain signs of the contagious typhus of horned cattle, the rinderpest of the Germans, which he had studied eight years before in Gallicia. The opinion of the learned professor, however, did not prevail; and even up to the present time, in spite of the evidence of facts, a great number of the daily papers maintain that the cattle plague, as it is called, is not the typhus of the Steppes, but an indigenous malady developed in the London dairies under the influence of unfavorable hygienic conditions, such as bad ventilation, crowded sheds, &c. I will not here inquire whether in maintaining these views the larger daily papers, and notably the *Times*, are or not influenced exclusively by the great commercial interests which are at stake, and might possibly suffer if this cattle pest were considered as a malady imported from a foreign country. What is certain, and absolutely certain, to me, is that this malady is nothing else than our contagious typhus of horned cattle, the rinderpest of the Germans.

The results of the learned investigations of the German and Russian veterinarians, as well as the researches of our

much-regretted colleague, M. Renault, who showed some years ago, in a memoir addressed to the Academy of Medicine, which caused a great sensation at the time, that the bovine pest originated in the Steppes of Eastern Europe; that there only were to be found the conditions for its development, and that the malady never manifested itself in the West of Europe, under the influence of general or common causes, to which it would be wrong to attribute it. One is, therefore, right in the conclusion that this pest has not originated in the dairies of the English metropolis, as many of the journals wrongly pretend it has, but that it has been imported by beasts coming from the Steppes.

On this point of etiology, science is well armed at the present time with documents so positive as to admit of no doubt that the typhus is a malady of the Steppes only; for there alone are found the conditions for its spontaneous generation; it is there where the germ is exclusively found. Nowhere else does the typhus develope itself, whatever may be the bad hygienic conditions to which animals of the bovine species might be exposed. This is a truism acknowledged by all who have studied the disease from documents numerous and complete at the present time, published both in Germany and Russia, on this diastrous malady.

The typhus which now prevails in England is not a new malady in that country, as has been believed by some persons. England, unfortunately, knew it in 1713 and 1745, and it has often visited France, Italy, and Spain, during the last century; following almost always in the train of the great armies of the North of Europe, of which the herds of cattle for their provision came in great part from the country where this malady prevails, and it appeared almost constantly in an enzootic form. The last visit of it in France was in 1814; and it is not one of the least miseries which the allied armies inflicted on us, for it prevailed for four years, and the losses caused by it amounted perhaps from 400,000,000 to 500,000,000 of francs. Having been taken somewhat by surprise, I have on this point, perhaps, not correct information. When one studies the documents which the celebrated doctors of the last century have left us on the typhus, such as Ramazzine, Lancisi, and Buniva, it is almost always possible to find that which they relate without attaching all the importance which we find now in it; such as, for instance, confirmation of the modern doctrine as it respects the etiology of this affection. In most cases we find the invasion of the malady traced to the introduction of a single Steppes ox into the locality where it broke out. If the pre-

sent epizootic in England depended, as some are too much inclined in that country to believe, on the bad hygienic conditions to which the cows are exposed, aggravated by the influence of the great heat prevalent, it remains to be explained how it is, the influence of these conditions being permanent, that England has been exempt from this pest for 120 years, the date of the last invasion, 1745. It is, therefore, truly the typhus of the Steppes which prevails in England, and not a malady which arose from the effects of local causes. How, then, has it been introduced? If, even on this point, we had no information, the doctrine of the *extranéité* of the malady must, nevertheless, be accepted, for this malady is the typhus. But there is no lack of information, and though I have not yet the necessary documents in my possession to establish the fact, one thing is certain, that before the breaking out of this disease in London, a cargo of cattle, consisting of 300 animals, was embarked at Revel, in the Gulf of Finland, its destination being England, per Lubeck and Hamburg. After a transit of six days, thanks to the rapidity of the means of locomotion at the present time, they arrived in England. Moreover, one may see in the metropolitan market of London, every Monday, cattle coming from Prussia, Austria, Podalia, Poland, Hungary. Spain, and France also, furnish their contingent. Of the 6,000 beasts in the London market, 3,000 at least are from foreign countries. England acts like a great sucker on Europe. It draws, for the consumption of its inhabitants, an immense quantity of animal food; and as the prices are remunerative, the dealers find it to their benefit to obtain it even from the Gulf of Finland; that is to say, from the Russian provinces, where typhus is enzootic. This disease having once shown itself in the dairies of the metropolis, it soon spread in all directions, because, unfortunately, the Government was not armed with sufficient power to arrest its propagation. The proprietors of the sheds where it prevailed hurried their cows, which were not yet attacked, off to the market, but which already carried the germ of the disease, and these animals have disseminated it in every direction. At the present time, the whole of Great Britain is invaded, and Scotland likewise. I have been enabled, in visiting the dairies in Edinburgh, to ascertain that the typhus had been introduced into that capital by cows bought in the London market. The Government has done all it could with the limited legal means at its disposal. The owners of diseased animals are obliged to give notice of their existence, and they are no longer allowed to move them from their

premises without the authorisation of an inspcetor appointed by the Privy Council. But these measures have the great fault of having been too late; and then they arc insuffieient and difficult in their applieation, on aeeount of the feeling whieh prevails in England, and the resistancc every Englishman always offers to the interferencc of Government in what he considers his own private coneerns. Every onc has the love of self-government in England, and more than one inspector has been refused admittanee in what is eonsidered sacred, namely, thc home of the Englishman, in spite, or perhaps on aecount, of the offieial eharacter with whieh he was invested. This liberty, whieh has its bright side, I will not eontest, but under thc present eircumstanees it is pregnant with great disaster. Ireland alone has escaped thc ravages of this ealamity; but it required all the energetie resistanee of the Lord-Lieutenant to obtain this result, who did not hesitate in taking on himself thc responsibility, so grave in a eountry like England, of violating the law and establishing a quarantine. On the other hand, thcre was something like a revolution manifested in the numerous meetings, and the directors of the railways also joincd this movement, and rcfused to convey eattle from England. The Privy Council was foreed to give in to such energetic demonstrations, and an order in Counеil now forbids the importation of cattle into Ireland from England. This importation is, however, small, considering thc inverse, for whilc thc importations from Ireland amount to 45,000 head of cattle, Ireland rceeives only 7,000 from England. Thus has been preservcd a provinee whieh, in this timc of distrcss, may prove a magazinc of reserved stores.

The typhus is, of all maladies which attack our cattle, that in whieh the contagious properties arc the most dcveloped. A single animal affeeted with it is able to infect a whole shed, and it suffiees for a herd of eattle to eateh it by being under the wind of an infectcd distriet. Here is an instance: the day after I arrived in England I went to visit, a few miles from London, a magnificent pasturc on whieh had beсn for the last six months forty beasts, two years old, whieh had had no communication with other cattle. Thc majority of these beasts were infected, and careases were lying on the ground. How had the disease penetrated into this pasture, isolated as it is from all habitations, and under thc most favorable hygienie eonditions possible? Thc high road passed at a few inches below thc pasture, and in this road cattle had passed, smitten with the pest. The malady had been thus transmitted by the effluvia, which might be called pesti-

lcntial, disengaged from thc bodies of these animals. This fact is not new in the history of typhus. Many others analogous, or identical, might be brought forward. The contagious properties of thc malady are such that they may be transmitted by means of the clothes of the persons who havc been in contact with diseased animals. Authors who have written on typhus in the last century, admit as certain this mode of propagation; and old ordinances of the *police sanitaire*, with a view to prevent the invasion of this malady into France, decree a quarantine of forty days for travellers coming from infected districts. I believe, from what I have seen in England in this respect, that there is not anything exaggerated in this. Here is a fact which proves the transmission by the clothes: the proprietor of a dairy, isolated, and of which the cows were in good health, went to the cattle market to obtain information respecting this malady, of which the journals spoke daily. After this hc entered his own shed without changing his clothes, and cight days after he had the pest amongst his stock. This man was convinced that he had brought the disease in his clothes into his sheds, and I believe that this conviction is wcll grounded.

Gentlemen, in a few words, these are the most prominent characters of this dreadful malady. The period of its incubation varies from five to thirtcen days.* The first objective manifestations are grcat debility and prostration, with a peculiar expression of the countenance, which I cannot better express than by saying that the animal appears gloomy; it seems absorbed, paying no attention to the surrounding objects; the neck is slightly extended, the head fixed, the ears motionless and drawn back; and often, at that first period, the respiration is somewhat sonorous, so that it might be heard at some distance. After that, tremors set in, manifested more particularly behind the shoulders and the thighs, with alternatc heat and coldness of the skin, and a lowering of the temperature notably at the base of the horns; rumination is not absolutely suspended, but it is irregular; the animal grinds its teeth, yawns frequently; the spine is more frequently stiff than otherwise in the different subjects I have observed; there is an abundant weeping of the eyes, and the tears have such acridity that they excoriate the skin of the face, lcaving a marked trace of their course, the epidermis becoming raised, as if by the effect of topical applications; a discharge from the nostrils now sets in, which is at first of a serous nature, acrimonious

* The longest period of incubation known was stated at the International Veterinary Congress, at Vienna, to have been nine days.

like the tears, and causing, like them, the erosion of the epidermis wherever it comes in contact with it. With the progress of the malady, the discharge from the eyes and the nose becomes purulent, and frequently at this period the expired air has a fetid odour; the respiration is also more difficult, and is accompanied by a laryngeal sound resembling roaring, which may be heard at some distance before entering the sheds; from the mouth flows frothy saliva, which accumulates in white flakes on the lips; the epithelium of the mucous membrane of the mouth is raised in parts by the serosity underneath, principally on the gums and the anterior part of the superior maxillary, and its adherence to the papillæ of the mucous membrane of the internal surface of the cheeks is so feeble that it suffices to use but a slight pressure with the fingers to detach it; at a more advanced period of the malady the head is waved from side to side, pendulum fashion, which has a certain analogy with senility; at the same time the rapid respiratory movements give to it an up and down movement coinciding with that of the respiration; diarrhœa is not tardy in setting in, and at first the evacuations consist only of liquid fæcal matter, ejected in a violent manner, accompanied with gas, which gives to it the characteristic fetidness; when the intestinal canal is empty, the evacuations become serous, and, finally, at the last period, they are bloody. In proportion as the malady progresses, the strength decreases, indeed, so much so that the animals almost always prefer a recumbent position; the stupor is extreme; the eyes are sunk deeply in the orbits; a purulent matter fills the space between the globe and the eyelids; the discharge from the nose is thick, streaked with blood, and very fetid; the temperature of the body is so sensibly lowered that when the hand is applied to the region of the back and loins the sensation conveyed is that of touching a cold-blooded animal. At that period a symptom, which has already been noticed by the old authors, is manifested by the emphysematic state of the cellular tissue, and particularly on the superior regions of the body there is found a crepitation on pressure, and on percussion a sound is emitted like that of striking an animal that has been blown by a butcher. When this symptom appears the animals have lost all sensation, and flies settle on them as if they were dead; they collect around the natural orifices and deposit their eggs, which sometimes become hatched; and this some authors have taken as a special sign of the malady, but which is evidently only a phenomenon without any special bearing on the disease. In the female there is one symptom convenient for the diagnosis

of the malady when one has a great number of animals to inspect, and to form a rapid opinion, which is, the colour of the membrane of the vulva, this being of a red mahogany, with spots of a darker colour on it. The rapid and great emaciation of the animal is one of the characters peculiar to this malady, and which is the more marked in proportion as the life of the animal is prolonged; it becomes like a consumptive patient, and the muscles waste so as to be compared to strips of parchment, showing the whole outline of the skeleton, principally about the quarters, pelvic region, and the hind extremities. Death ordinarily sets in from the third to the twelfth day; life is seldom prolonged beyond that time. We now come to the most remarkable lesions which are found on the autopsy in this malady. The third stomach, or omasum, has injection of the membrane of its multiplied folds, and ecchymoses exist. On a great number of them ulcerous perforations are also met with; on some of them, dryness of the ingesta interposed between them. The fourth stomach, or abomosum, is strongly injected throughout; all its folds are of a red mahogany colour, and in some cases there are a multiplicity of ulcers disseminated over the surface. These ulcers give to it a whitish tinge, as if it had been washed. In the small intestines of the heifer, in the pasture of which I have spoken before, the glands of Peyer were covered with pustules and confluent ulcerations. This lesion is not constant, but what is always observed on the mucous membrane of this intestine is the general injection, with longitudinal striæ traversed by cross irregular striæ, forming an irregular network on the mucous membrane, the meshes of which are large in size and very characteristic. In the colon there are very numerous small ulcerations, at the bottom of which is found a small clot of blood, making a sort of prominence on the surface of the intestine. On removing this by scraping, an ulcer of a certain depth is perceived, which seemed to have served as a point of insertion. There is injection throughout of the mucous membrane of the colon, as well as that of the rectum, which is vegetated and areolated, the same as that of the small intestines. The spleen is generally healthy; petechial spots and deep ecchymoses are found in the heart; there is general emphysema of the lungs, the lobes of which are distended by extravasated gas, the same as in the subcutaneous cellular tissue; injection of the mucous membrane of the bronchial tubes exists, and in the larynx an exudation of purulent matter, condensed into false membranes, but no ulceration of this membrane.

These, gentlemen, are the lesions most characteristic of this malady, which is so destructive that it kills 90 per cent. of the animals attacked. If in England the excitement is so great, that is principally owing to not having from the beginning endeavoured to put a sufficient check to the disease; the first contaminated animals being allowed to be moved from the sheds and taken to the market, when the malady was already in a state of incubation, and thus it was carried in every direction. Be it that at first it was not thought that this malady was of so serious a nature, or the Government did not consider it had sufficient power by law to grapple with it, and thus valuable time was lost before any measures were taken to arrest its progress; and when it was decided to take active measures, it was already very late, and the actions of the Government, as in similar cases, so limited by the laws, and the English spirit, it therefore could not act with the required energy. But now that the gravity of the evil is known by its disastrous effects, the individual initiative, always so powerful in England, tends to supply the insufficient power of the Government, and the proprietors and keepers of cattle combine in those districts which are not yet infected; funds are raised by voluntary subscription; they undertake, until further orders, not to introduce any bovine animal from whatever part of the world it may come; and if the malady breaks out in a shed, the affected are to be killed immediately, and the healthy sent to the butchers; the proprietors being indemnified from the common fund. These are excellent measures, and if they had been adopted sooner, England would not have been in the position she now is. At present it is impossible to say when the malady will cease. In 1713 it was introduced into England, but thanks to the energetic measures then taken, its propagation was prevented; only three districts were invaded, and in three months the malady was extinguished. It returned in 1745. Be it that at that epoch the Government found itself weaker, or less vigilant, the malady spread in every direction, and lasted not less than thirteen years. I fear much that the present one will have as redoubtable a future.

For the present, gentlemen, I limit myself to these considerations. My mission is not yet terminated. At my return, if I have any more facts of interest, I will submit them to the academy.

THE YORKSHIRE VETERINARY MEDICAL SOCIETY.

A special meeting of this society was held at the Queen's Hotel, Leeds, August 29th.

The Chair was taken at three p.m., by the President, Mr. E. C. Dray. There were also present, Messrs. Naylor, Wakefield; Cuthbert, Leeds; Vice-President R. Lord, Halifax; Treasurer Haycock, Manchester; Freeman, Hull; Howell, Rochdale; Edmondson, Harmby; Bale, Otley; Nicholson, Womersley; Secker, Knaresborough; Secker, Ripon; Broughton, Leeds; Fallding, Wakefield; Kirk, Leeds; Carter, Bradford; Pratt, Masham; Braime, Methley; Kay, Pontefract; Smith, Darton; Patterson, Dewsbury; Schofield, Pontefract; Elam, Huddersfield; Martin, Sen., Chesterfield; Boyce, Howden; B. Smith, Barnsley; Taylor, Wetherby; J. W. Anderton, Skipton; Duff, Howden; with the Secretary, and Messrs. Higgins (Meat Inspector), Leeds, and Quarterman, an agent from Pontefract.

A letter having been read from Professor Simonds regretting his inability to be present, the chairman said the meeting was called to consider the disease now unfortunately prevailing in this country called

THE CATTLE PLAGUE.

In searching for truth, he observed, the majority of people find the task very tedious and they often depend upon others for its elucidation. This is the case with the present theory of the origin of the cattle plague. Whether this destructive and pestilential disease has been imported into this country, or is indigenous, or has been engendered here, is only hypothetical. Its presence is, unfortunately, too true. We have an enemy to deal with which will require all our energies to arrest. The symptoms of this fearful complaint have been accurately described by Professors Simonds and Dick. That the cattle disease now raging here is similar to the Russian plague called yasva is not imporbable. It has made its appearance in two forms, one apoplectic, and the most fatal, and the other exanthematous, or pustular, which might succumb to energetic remedies if the owners of stock were to give the veterinary surgeon a chance of administering medicine. Surely we must not abandon ourselves to despair with respect to prophylatical and curative measures, and recklessly resort to prohbition of importation or destruction. To do so would be acknowledging that veterinary science had made no progress; but if no opportunities are given to treat and combat with the disease, it is impossible for the veterinary surgeon to become thoroughly acquainted with the

malady or to find an antidote. With regard to the treatment several suggestions have been made by Professors Simonds and Dick, as also by Mr. Romains, who has studied the plague in Russia. The latter gentleman recommends the administration of linseed oil and salt, followed up with tonics, such as the sulphate of iron combined with new ale. Mr. Gibbs, of Taunton, M.R.C.V.S., prescribes French brandy and muriatic acid every six hours until the patient is relieved. It now appears to be almost a unanimous opinion that this disease is, like typhus fever in the human subject, of a most mischievous and fatal character. If you were to visit some of the cow-sheds in this borough, as I have done in the performance of my duties as Veterinary Inspector, you would be amazed that there is not more sickness. I fear there will be no improvement until the occupiers of these filthy places are prosecuted and fined, the only way of causing obedience and enforcing the orders of the Privy Council. Only by the establishment of vigilant measures, by an organization of veterinary inspectors in every town, can we hope to check this formidable evil. Combination can do much. Let us convince the public that our profession is composed of scientific men, and that we can, when called upon, devote our abilities, not only to stay disease, but to adopt remedies of a preservative and curative character. The cases that have occurred here, and of which I have made *post-mortem* examinations, are, first, a three-year-old heifer, which came from the neighbourhood of Denton Park. I never examined a more diseased animal. Cysts containing morbid matter were present in every part, and pustules on the integuments. The mucous membrane lining the intestines was in a high state of inflammation. I forwarded portions of this carcase to Professor Simonds for his inspection and examination; but I have had no reply until this morning. The next case was one to which Inspector Higgins called my attention—(and allow me to say, that Inspector Higgins is a gentleman who most efficiently discharges the duties entrusted to him by the magistrates. He has co-operated with me most willingly since I was appointed veterinary inspector, and I have no doubt the other inspectors who have been appointed to-day, Messrs. Cuthbert and Broughton, will find him ready to render every assistance). It was a six-month's-old calf, presenting all the premonitory symptoms of the cattle plague, and it was destroyed in consequence of there being no suitable place to put the animal under treatment. The next case was a cow, alleged to be suffering from felon, which died, and was injudiciously brought to the slaughter-house in Vicar Lane. The *post-mortem* examination of this animal exhibited extensive disease, and I ordered the carcase to be buried. The next was another cow, which showed most marked disease in all the organs of the body, as well as the muscular and membranous parts. I ordered this beast to be interred six feet deep, and quick lime to be added. Although I had not an opportunity of seeing the above animals alive (with the exception of the calf), I feel confident from the abnormal state of their bodies, that they were suffering, and died of a disease of a malignant and

typhoid form. The last case, which presented itself last night, was a beast from Thorpe Hall pastures, which had been brought to the slaughter-house in a cart. When I saw it it was in a dying state. Mr. Higgins and I ordered the animal to be destroyed; the symptoms antecedent to death were a peculiar moaning noise, discharge from the eyes, curvature of the back, and emphysema of the lungs. In regard to the precautions to be taken to prevent the spreading of this dreadful scourge, all parties are agreed as to the necessity of thorough ventilation of the cow sheds, the removal of all excrementitious substances, whitewashing the places frequently, the distributing of chloride of lime or other disinfectants, the isolation of any suspected animal, and its removal to a temporary hospital or sanitarium. The following propositions I have had the honour of submitting to our worthy Mayor:—1st. That a peremptory notice be sent to all owners or occupiers of registered slaughter-houses in the borough of Leeds not to receive or allow any animals or carcases known or supposed to be affected with any disease, more particularly the epidemic termed "cattle plague." 2nd. In case it be found impracticable to bury any animal dying, or condemned with the above disease, on the premises, that a suitable place be provided for such a purpose. 3rd. That an assistant-inspector be appointed to carry into effect the burial of such animals or carcases. 4th. That the police have instructions to report to the inspectors any case or cases of cattle dying of any disease, or the removal of any carcase or carcases during the night, in their respective beats. 5th. That a temporary hospital should be erected for those cases where the disease only presents premonitory symptoms, or is in an incipient state; and a covered conveyance containing a disinfectant be provided for the removal of any animal or carcase which this direful malady has attacked. We hear from different parts of England of animals being afflicted, distant from dangerous markets, or probability of contagion; thereby confirming the fact of an epidemic raging the country, and the great difficulty in checking its progress. The information ought to be a further stimulus for us to buckle on our armour and fearlessly assault this demoniacal foe. All epidemics are diminished by their frequency, and the better mode of treatment; but this is not the time for any man to advertise himself in conjunction with this important subject, or encouraging speculative theories. It is imperative for us to examine the question in all its bearings and practical results. Now, more than ever, is the necessity on us to be united, that we may not only grapple with this fearful pestilence, but cordially assist each other in performing the anxious and laborious duties which we are called upon to discharge. (Applause.)

Mr. Martin Naylor, Wakefield, entered at some length into the first appearance of the plague in this country, and contended that there was no well-authenticated proof of the disease having been introduced from abroad.

Mr. Freeman, Hull, who had been a port inspector for two years, stated that lately they had been troubled with animals having the

foot and mouth disease, but within the last three or four months there had not been a single case either of that or any other disease. A very sharp look-out had been kept, as it was said in London that the disease had come through Hull. He had been a veterinary surgeon since 1834, and he never met with fewer cases of disease than he had done this year.

The Chairman asked Mr. Freeman whether he had not noticed lately that the foreign cattle had been in a very superior condition?

Mr. Freeman said that during the last three months he had recorded in his note-book that the foreign cattle had been super-excellent.

The Chairman.—Then you are satisfied that the disease has not been imported into this country, so far as Hull is concerned?

Mr. Freeman said he was quite satisfied of that. He thought they were as liable to generate disease at home as to import it from abroad. He might mention that only the other day, a farmer in the vicinity of Hull showed him a paper recording a cattle plague which occurred in this country about the year 1747, which lasted for four years, and which carried off fifteen out of every twenty animals.

Mr. Naylor said it was most singular that it should be positively asserted that no disease could be generated in this country, when they had evidence not only of the plague referred to by Mr. Freeman, but of disease existing 5000 years ago.

At this stage of the discussion, *Mr. Higgins*, the inspector of meat for Leeds, who was present, conducted the members of the society to the slaughter-house in Wood Street, to inspect the carcase of the beast referred to by the chairman.

On their return to the hotel, *Mr. Haycock*, of Manchester, stated that the carcase of the cow at the slaughter-house presented no really pathognomic signs of the cattle plague, excepting the very bad colour of the flesh and the spots on the intestines. The rectum presented red streaks systematically arranged, but whether the disease was the cattle plague or not he was not prepared to say.

Mr. Williams, Bradford, thought the case presented some traces of a true typhoid nature. He looked upon the disease as such, and was of opinion that the animal presented the first signs of the rinderpest.

Mr. Howell thought the patches about the intestines were perhaps indicative of the rinderpest. He was of opinion that if the disease was latent in animals shipped at Revel for Hull and London, it ought to develope itself before they arrived at their destination.

The conversation was continued by several other gentlemen, and at the conclusion it was determined that all animals suffering from the disease, which the members of the Society might be called upon to inspect, should not be condemned, but should be placed in a sanitarium and treated medicinally. Wholesale condemnation,

it was contended, would be a blot upon the character of the profession.

Votes of thanks were then given to the Chairman, and to Mr. Higgins, and the proceedings terminated.

LANCASHIRE VETERINARY MEDICAL ASSOCIATION.

THE members of the Lancashire Veterinary Medical Association held their twelfth Quarterly Meeting in the Royal Institution, on the evening of September 7th, 1865. The President, Mr. P. Taylor, in the chair.

The President opened the meeting by introducing the members of the various associations of Liverpool, Yorkshire, and Manchester, who had met in the afternoon at the Queen's Hotel, to consider the formation of a protection society against unjust legal proceedings, so frequent against the profession. He (the President) informed the meeting that printed forms, &c., would be sent to each member, explaining the objects of the society.

The Secretary, before reading the minutes of the two previous meetings, apologised for his absence on the evening of the last meeting. The minutes were then read and confirmed. Mr. Greaves' addition to Rule 15 was passed unanimously. It was to the effect, that any members of other veterinary societies shall have free admission to the quarterly meetings of this society, and can join in the debates; and if such member be desirous to become a member of this society, he can be elected in the usual way, without paying the entrance fee or annual subscription, unless he chooses to do so. The name of such member to be duly entered in the books of the society, and shall have a notice circular sent him of every quarterly meeting. He shall be entitled to all the privileges of membership, excepting bearing office, voting, or receiving any financial benefit from the funds of the society.

An amendment to the preamble, by Mr. Haycock, was rejected by a large majority.

Mr. Greaves then nominated Mr. Lucas, of Liverpool, as a proper person to be made an honorary member, as also Mr. Cartwright.

Mr. Haycock nominated Mr. Friend, of Liverpool, as a proper person to be an honorary member of this society.

Mr Cartwright then produced a long and interesting essay upon "Parturition," and exhibited also a large number of instruments of nearly every possible description. On account of the length of Mr. Cartwright's essay little room was left for discussion; what there was, was principally on the instruments used. The essayist had undoubtedly spent an immense deal of time in compiling his

excellent paper, for which the society tendered him its warmest thanks.

Mr. Haycock then volunteered to bring in a paper on a form of lameness yet undescribed.

After the usual vote of thanks to the President and other officers, the meeting terminated.

THE WEST OF ENGLAND VETERINARY MEDICAL ASSOCIATION.

Torquay; *September* 11*th*, 1865.

Dear Sirs,—May I be allowed to inform your readers that the next Quarterly Meeting of the members of the above Society, will take place at the Athæneum, Exeter, on Friday, the 20th October, at one o'clock, p.m., when it is hoped all the members will attend.

The business to be transacted is to pass a code of Bye-Laws for the government of the Society, and other routine matters connected with a young association.

Mr. Bodington, one of the vice-presidents, has also kindly consented to read a paper on "*The Past, the Present*, and the Future of the Veterinary Profession," which will be a most interesting essay I have no doubt.

Believe me,
Faithfully yours,
R. H. Dyer,
Hon. Sec. and Treasurer.

To the Editors of 'The Veterinarian.'

TESTIMONIAL TO R. H. DYER, M.R.C.V.S., TORQUAY.

We have perused with much pleasure a testimonial presented to Mr. Dyer, M.R.C.V.S., on his retiring from Waterford, a copy of which we subjoin, for while professing to have a community of interests, we also feel that when one member of the profession is honoured, we participate in the same.

The testimonial is signed by the Bishop of the united dioceses of Lismore, Emby, Cashel, and Waterford, followed by above thirty names of the leading nobility and gentry of Waterford and its neighbourhood, among which we perceive several members of the other branch of the medical profession.

This must be extremely gratifying to Mr. Dyer, more particularly as he is promised something more tangible, in the shape of a "souvenir," to follow soon.

(COPY.)

"We, the undersigned Nobility, Clergy, and Gentry of Waterford and its vicinity, having been informed that Richard H. Dyer, Esq., Veterinary Surgeon, who has resided in this City during the last fifteen years, is now about to return to England as his future residence; under these circumstances we sincerely feel that we owe it alike to him and to ourselves to say, that we cannot allow him to pass away from amongst us, after such a lengthened period, without taking this opportunity of presenting to him some trifling testimonial as a mark of our high opinion of the distinguished professional ability and skill which has always been exhibited by him, and which has given such general satisfaction to all with whom he has had to do.

"And now we should say, also, that whether we view him in his professional capacity, or in the character of a gentleman of the strictest integrity and honour, we do testify that our feelings of esteem and regard to him and his amiable family, must make their departure a matter to be much regretted. And we have only to hope that, under the guidance of a gracious Providence, his lot will be cast in a goodly heritage, and his rare qualifications be quickly discerned and appreciated by the community amongst whom he may take up his future residence.

"(Signed) &c., &c.

"Waterford; *October*, 1864."

ARMY APPOINTMENTS.

War Office, Pall Mall; *Sept. 8th.*

Edward Ewing, gentleman, to be Acting Veterinary Surgeon, *vice* John Hanly, promoted to the Royal Artillery.

Sept. 14th.

15th Hussars.—Acting Veterinary Surgeon M. F. Healey, to be Veterinary Surgeon, *vice* John Burr, whose appointment from half-pay, May 2, 1865, has been cancelled: June 30, 1863.

LIST OF MEMBERS OF THE ROYAL COLLEGE OF VETERINARY SURGEONS APPOINTED AS GOVERNMENT INSPECTORS, FOR THE SUPPRESSION OF THE CATTLE PLAGUE.

We have endeavoured to make the following list as complete as possible, and any omission will be corrected in our next. The districts belonging to each inspector are not indicated, as they are of necessity subject to alterations, and for the further reason that many country inspectors have neglected to furnish us with the necessary information.

ENGLAND.

Bedfordshire.

Cornelius, John E., Luton

Berkshire.

Flanagan, W. G., Reading
Gadsden, John Wesley, Bracknell
Wheatley, W. A., Reading

Buckinghamshire.

Bennett, John, Stoney Stratford
Bond, Edward, Buckingham
Crowhurst, Eusebius G., Amersham
Lepper, Henry, Aylesbury
Lepper, George Henry, ditto
Meekes, James, Great Marlow
Powell, John, Newport Pagnell
Powell, William, Newton Longville

Cambridgeshire.

Brook, Thomas, Fyfield

Cheshire.

Darwell, George Henry, Knutsford
Taylor, John Boardmau, Hyde

Cumberland.

Bell, J., Carlisle
Carlisle, Joseph, Carlisle
Thompson, Henry, Aspatria
Reynolds, Richard L., Alfreton

Derbyshire.

Leech, Thomas M., Bakewell
Martin, Francis Else, Chesterfield

Devonshire.

Austin, Thomas, Honiton
Collings, John J., Plymouth
Dyer, Richard H., Torquay
Ferris, Henry, Dittisham
Heath, James P., Exeter

Dorsetshire.

Redwood, Joseph, Dorchester

Durham.

Allison, William, Thornley
Hall, Robert, Stockton-on-Tees
Hunting, Charles, South Hetton
Peele, Henry, West Hartlepool
Plews, Thomas, Stocton
Thompson, Thomas, Sunderland

Essex.

Hazell, John J., Great Bromley
Helmore, William, Stratford
Hutton, Robert R., Great Yeldham
Lawrence, Henry Stewards, Romford
Seaman, Isaac, Saffron Walden
Skelton, Richard, jun., Leyton
Tayler, Rowland, Colchester
Taylor, James, Wick
Young, John, Felsted
Webb, Henry, New Stampford

Gloucestershire.

Hobbs, Henry, Newnham
Thomas, Richard W., Tewkesbury
Vick, John, Gloucester

Hampshire.

Barford, John Davis, Southampton
Burden, William, ditto
Colebrook, Charles, Basingstoke
Crafts, Howell W., Fareham
Gould, George James, Southampton
Gregory, J. G., Portsmouth

Herefordshire.

Hill, John Roberts, Leominster

HERTFORDSHIRE.

Hirst, Charles Samuel, Barnet
Proctor, Harrison, Hertford
Wilson, William, Berkhampstead
Webb, Thomas G., Bishop's Stortford

HUNTINGDONSHIRE.

Fordham, Thomas B., Godmanchester

ISLE OF WIGHT.

Wheeler, Edwin, Rookley

KENT.

Boulter, Frederick C., Woolwich
Cowie, James, Bromley
Crowhurst, Charles, Maidstone
Crowhurst, James, Canterbury
Fordham, George, Willesborough
Gregory, Thomas, Tunbridge
Hogben, Henry, East End Hill, Hythe
Ingersoll, Frederick Richard, Lewisham
Martin, John Bean, Rochester
Morgan, Charles, Nonnington, Wingham
Plomley, John Croft, Maidstone
Shaw, Henry K., Sydenham

LANCASHIRE.

Buckley, Samuel L., Blackburn
Taylor, James, Oldham

LEICESTERSHIRE.

Bailey, Edward, jun., Leicester

LINCOLNSHIRE.

Batchelder, John, Grantham
Bland, William James, Boston
Sharman, Thomas B., Old Leake

MIDDLESEX.

Boughton, Thomas Peter, Hounslow
Broad, James C., Praed Street, Paddington
Brown, Geo. T., White Horse Yard, New Cavendish Street
Dale, William, Stanmore
Farrow, William, Commercial Street, Whitechapel
Giltro, William, Hampstead
Hancock, Henry Michael, Uxbridge
Moss, F. W., Earl Street, Blackfriars
Priestman, Henry, Caledonian Road
Shirley, William, Twickenham
Simmonds, William, High Street, Poplar
Tegg, George, jun., Stamford Hill
Woodger, Joseph, jun., Bishop's Mews, Paddington

MONMOUTHSHIRE.

Lewis, George, Monmouth

NORFOLK.

Baldwin, George Thomas, Fakenham
Beart, Walter James, Lynn
Buckingham, H., Harleston.
Carter, Charles N., Swffham
Chambers, Wm., Docking
Crabbe, William C., Earsham
Cross, George Thomas, King's Lynn
Denny, Joshua, Roughton
Ellis, William, Hempnall
Hammond, John, Bale, Thetford
King, Edward James, Diss
Overed, John Davey, Blofield
Plumbley, George H., Southrepps
Rattee, Daniel Elmer, Fundenhall
Riches, John Worship, Acle
Shipley, William, North Walsham
Shipley, William, Great Yarmouth
Smith, William, Norwich
Whitwell, Richard, Norwich
Worm, James, Watton
Wright, James, Burnham Overy

NORTHAMPTONSHIRE.

Garratt, Samuel S., Northampton
Mackinder, Richard, Peterborough
Merrick, Thomas James, Northampton

NORTHUMBERLAND.

Aitken, Robert, Felton
Stephenson, Clement, Newcastle-on-Tyne

NOTTINGHAMSHIRE.

Pyatt, Henry, Nottingham
Reynolds, Richard, Mansfield

OXFORDSHIRE.

Page, Charles N., Banbury

SHROPSHIRE.

Cartwright, William A., Whitchurch
Payne, Colin V., Market Drayton

SOMERSETSHIRE.

Barrell, Thomas, Keynsham
Cade, Thomas, Bristol
Leigh, Nathaniel, Bristol

STAFFORDSHIRE.

Carless, John, Stafford
Carless, William, ditto
Checkett, Benjamin, Wolverhampton
Walters, Robert G., Stone

SUFFOLK.

Coe, Walter, Bury St. Edmunds
Fenner, William Lyle, Clare
Girling, Robert, Ipswich
Grimmer, Charles, Bungay
Harvey, Stephen S., Lowestoft
Hutton, Josiah, Sudbury
Newson, Henry, Beccles
Shorten, Charles T., Ipswich
Taylor, Edwin, Bury St. Edmunds
Thurston, Walter, Fressingfield

SURREY.

Cross, William Francis, Battersea
Evershed, Stephen, Godalming
Ernes, and Lowe, William, Dockhead, Bermondsey.
Forbes, Matthew B., Reigate
Legge, Henry Charman, Dorking
Lupton, Jas. Irvine, Richmond
Stanley, Frederick Thos., Borough

SUSSEX.

Crofts, Henry, Arundell
Crowhurst, James, Warbleton
Dawtrey, Jeffery, Chichester.
Hopkins, James, Pulborough
Vine, Vincent, Lewes

WARWICKSHIRE.

Ison, William Charles, Atherstone
Proctor, Alfred B., Meriden
Watson, Walter, Rugby

WORCESTERSHIRE.

Blakeway, Francis, Stourbridge

YORKSHIRE.

Anderton, John Wilkinson, Skipton-in-Craven
Carter, Joseph S., Bradford.
Collins, Thomas, ditto
Cooper, Job, Market Weighton, Brough
Emmot, D. C., Keighley
Fryer, J., Kirby, Fleetham
Horne, Thomas, Barnsley
Kay, John, Pontefract
Mather, George I., Doncaster
Secker, Thomas, Ripon

SCOTLAND.

ABERDEENSHIRE.

Snowball, John, Huntley

BERWICKSHIRE.

Hogarth, George, Berwick

LANARKSHIRE.

M'Call, James, Glasgow

LINLITHGOWSHIRE.

Borthwick, John, Kirkliston

PEEBLESHIRE.

Ferguson, Patrick, Peebles.

ROXBURGHSHIRE.

Robertson, William, Kelso

OBITUARY.

As no other account has reached us, we copy the following from a provincial paper. Mr. Plumbly was a pupil of the Royal Veterinary College.

"A short time since the cattle disease appeared in the stock-yard of Mr. Ruffell, Melford, Suffolk, and the cases were attended

by Mr. Robert John Plumbly, veterinary surgeon, Sudbury. On Thursday a diseased cow was brought out and shot by Mr. Plumbly, who afterwards made a partial *post-mortem* examination of the carcass. In doing so with a small scalpel his shirt sleeves became saturated with blood, &c., from the animal. He had an unhealed boil on his arm at the time. The same evening he was attacked with sickness and acute pain in the head and chest, accompanied by a soreness in the bones generally. On the following day he appeared somewhat better, and was able to attend to his duties, but became worse towards evening and was confined to his house the following day. He slept well that night, and seemed somewhat better on Sunday morning. About two o'clock that afternoon he was taken in what seemed to be a fit and expired in a few minutes, before the surgeon, who only lived next door, could come to his assistance. It was thought that death had resulted from a fit of apoplexy, and a medical certificate to that effect was given. Rumours, however, soon became current that Mr. Plumbly's death was caused by the cattle plague, and the borough coroner (Mr. R. Ranson) directed a *post-mortem* examination to be made. But by this time, so rapid had been the spread of the virus through the system, that the body appeared to be perfectly plague stricken, and by Tuesday morning, when the surgeons arrived to examine it, and it was taken out of the coffin, the corpse scarcely retained the semblance of a human body, the head and trunk being much swollen and of a greenish-black colour; the features quite undistinguishable, and all the flesh converted into a putrid jelly-like mass. At the inquest, Mr. Maurice Mason, surgeon, said he was of opinion that the death of the deceased was caused by the absorption of poisonous virus into his system while he was engaged in making a *post-mortem* examination of a beast that had been suffering from the murrain or cattle plague. This opinion as to the cause of death was concurred in by Mr. Bestoe Smith, surgeon, J.P., who said that it would have been highly dangerous for them, in the state in which the body was, to have made a *post-mortem* examination, even if they had been able to do so, and that all the tissues were so disintegrated that it would have been useless to have attempted a dissection. Verdict, "That the deceased, Robert James Plumbly, died from the effects of the absorption of virus or poison into his system upon the occasion of his making a *post-mortem* examination of a cow which had died from a certain disease called or known as the cattle plague."

We deeply regret to announce the death of Mr. Robert Bowles, M.R.C.V.S., Abergavenny, who died September 21st, aged 52. Mr. Bowles' diploma bears date June 15th, 1835.

THE

VETERINARIAN.

VOL. XXXVIII. No. 455. NOVEMBER, 1865. Fourth Series. No. 131.

Communications and Cases.

OPENING OF THE SESSION 1865-66 AT THE ROYAL VETERINARY COLLEGE. INTRODUCTORY ADDRESS BY PROFESSOR VARNELL.

Gentlemen.—At a period when my time was more than usually occupied, I was requested to deliver the customary Introductory Address, and thus to open a new sessional course of instruction; to be the instrument of welcoming our old pupils and friends back again to this institution, and to introduce those who have just entered the College to the studies they will have to pursue.

The pressure of professional business, which has so much increased of late in this institution, and the comparatively little time I have had to prepare this lecture must be my apology for the imperfections of my remarks; and will, I hope, induce you to look with a lenient eye upon the defects which it may contain.

Occasions like the present afford an opportunity of selecting subjects for discourse from a very wide field, and of introducing thoughts and ideas which, from time to time, may have been suggested by past events; some of which may be useful to point out errors, both theoretical and practical, that may have been committed, thus teaching us how to avoid them for the future. Others, which at the time may have been

only hypotheses, may now be confirmed as practical facts, and worthy of being perpetuated. The latter may be few in number, but every step in advance is important.

Although appropriate subjects upon which to address you are abundant, I nevertheless feel great difficulty in selecting those most calculated to act as incentives to industry and perseverance, which, in the pursuit of knowledge, are so necessary. Perhaps I shall best perform my task by first pointing out some of the claims the public will have upon you when you enter upon the practice of your profession. The necessity for you to acquire all the information you can, during your pupilage, whereby to fulfil those claims, not only to the public, but also to your professional brethren, is very important, if your desire be to raise its status in a scientific and social point of view.

A greater necessity, perhaps, has never occurred than the present, for teachers of veterinary medicine to endeavour to instil into their pupils sound principles, and on the other hand, for the students to strive to their utmost to acquire them.

Let me illustrate these remarks by referring you to the losses the owners of cattle have experienced, and are now experiencing, in consequence of a disease which, within the last few weeks, has appeared amongst them. Such losses, I feel confident, have never been witnessed by the present generation in England. Practice alone will not teach us the nature of this disease, nor does experience render us much assistance. Those, however, that are trained to understand principles, and to draw conclusions from phenomena within their reach, are, I have no doubt, more able to grapple with new forms of disease than those who rely either upon practice or experience, or even both combined; not that I would wish to ignore the value of practical information, far from it.

This new and fearful disease has, in some instances, destroyed the entire stock of many of the London dairymen, and far away in the country, many a fine herd of cattle is also fearfully decreased in numbers, by the ravages it has made amongst them. The daily inquiries at the College respecting its nature have been numerous; owners of cattle have come seeking for information as to what they should do with the dying, and whether any means could be devised to save those that were apparently healthy, or, as far as they could observe, had shown no symptoms of the disease when they had left them; others have arrived from various parts of the country, on their own account, or that of their neighbours, seeking for information respecting *this new disease*, which may already

have attacked their cattle, and which was branching out from various points in the country, leaving its victims in its rear.

Veterinary surgeons from all parts of Great Britain and Ireland, have left their homes and their practice, at considerable expense and inconvenience, to visit the College, their "Alma Mater," to see cases in its infirmary, with a view to get all the information possible respecting the symptoms and *post-mortem* appearances, so as to enable them to recognise cases, should they occur in their locality.

It is satisfactory to learn that societies have been formed in almost all parts of England, with the object of defraying, to a certain extent, the losses sustained. Noblemen and landowners, much to their praise, are also making inquiries and interesting themselves in behalf of their tenantry and others. We have also been visited by professors of veterinary schools, together with veterinary surgeons from *France, Austria, Prussia, Denmark,* and other parts of the continent, some of whom seemed to be familiar with the disease, and who, from the importance they attach to it, and the danger of its spreading into the nations and countries they came from, were anxious to ascertain if it be the true "rinderpest" so much to be dreaded. These gentlemen, like our own veterinary surgeons, seek for all the information we can give them respecting its origin and other important points in connection with it.

But among the inquirers and investigators of this malady, I have been particularly pleased with the way in which the practitioners of human medicine have, without any ostentation, worked with veterinary practitioners, in examining diseased and dead cattle, for the purpose of understanding the pathology of this affection, and the courtesy with which they, as a rule, have offered, in many instances, their valuable suggestions. I purposely mention this because, I think, it may act as a powerful incentive for you to acquire that amount of knowledge which will enable you to carry on an inquiry with scientific men.

It is encouraging to all of us, and particularly to you, who are just entering on your studies, to observe how readily the Government recognise the professional services of the veterinary surgeon and their appreciation of their value. In times past, if the country had been visited by such a fearful scourge as the present one threatens to be, its investigation, together with suggestions for its arrestation, would have been altogether in the hands of practitioners of human medicine, and the history of the outbreak, would by them, and them alone as medical men, have been chronicled.

Supposing that I am correct in these remarks, there must be reasons why this favorable change has taken place, and why the Government seems to repose more confidence in the members of our profession, than might by some have been expected. What are the reasons? They are, gentlemen, simply these, and I feel proud in conscientiously believing it, and stating, without any egotism on my part or fear of contradiction from others, that the advance which has been made, in a scientific point of view, and the comparatively high moral standing generally observed in the members of our profession, is one of the main causes. I feel confident that I am correct in this respect, and I have no doubt it has been observed by those high in office. But this is not the only reason, there is another influence, which, I believe, has had much weight, in producing these favorable results, and that is, the confidence Government has had in their veterinary adviser on this important question, who, as you all know, is your teacher of cattle pathology. This has arisen from the tact and assiduity he has evinced in undertaking his task, and will, I have no doubt, reflect credit upon our profession at large, and which, I trust, will also be transmitted to you, when you enter into practice. I sincerely hope that this advance will induce you to exert yourselves to secure a continuance of public confidence, and will act as a powerful incentive to you to labour diligently to that end.

Have we any other cause for congratulating ourselves as a body? I think we have, and individually, and also on the part of the profession, I would wish to acknowledge it. I have reference now to the press, whose approbation or otherwise, of our scientific and practical usefulness, has a mighty influence on our welfare as a body. Its remarks upon the conduct of veterinary surgeons, during the outbreak of this cattle plague, particularly towards those who are taking a very active part in the investigation of it, are, I believe, generally favorable; at any rate no dereliction of duty has, that I am aware of, called forth any remarks of disapprobation.

These facts, if facts they are, are encouraging to you as students, and also to the members of our profession.

But I would wish to say a few words more in reference to this new disease in cattle.

You may be aware that in 1857 Professor Simonds, accompanied by Mr. Ernes, a metropolitan veterinary surgeon, visited Poland, for the purpose of investigating and studying the character of a disease in cattle, termed "rinderpest," which raged with fearful violence in that part of the

continent, and on the return of these gentlemen, Professor Simonds wrote a report on what they had seen and heard respecting it. This report was published, but as only a few copies got into the hands of the public, I think it highly important that there should be a reprint of it, with a view to its general circulation. The report is so replete with details respecting the history of this affection, the ravages it made in the herds of cattle in that part of Europe, its highly contagious character, its supposed incurability, its symptoms and *post-mortem* appearances, and many other details, that it would enable the owners of cattle to recognise this disease from any other, and would also show them the necessity of adopting stringent measures to prevent its spread. I would therefore advise you all to possess, as early as possible, this document, as it will prepare you to recognise the disease, and also assist you to understand and appreciate the lectures you will no doubt hear on the subject.

On the first outbreak of the disease in this country, which, I believe, occurred near London, several cows died very suddenly, and it was a question whether they had not been purposely poisoned; it was also supposed that the grass they had been eating was the cause of their death. So serious was the loss among these cows at that time, that the veterinary practitioner who attended them caused some of the parts of one that had died to be brought to the College for the opinion of the professor of cattle pathology as to the cause of death. I was present when he examined these parts, and while reflecting on the subject I said to Professor Simonds, do you think it has any analogy to the disease you saw on the continent? He answered at once in the affirmative, but he said, it would be necessary to see more cases before we set forth that such was the case, and that no time must be lost in prosecuting further investigation.

The controversy which is now going on with reference to the origin in this country of the cattle plague, I will not trouble you with; those who are best acquainted with its history, seem to have no doubt whatever about its being imported; and further, as the diseases of cattle do not come within my province, as one of your teachers it would ill become me to expatiate upon that, which up to the present time is, I believe, but ill understood. I cannot, however, resist remarking how much scientific men differ as to its true pathology, and yet singularly enough, their conclusions have pretty much the same bearing. This is a question, also, which time, close observation, and direct experiments, are to determine; and should we be so unfortunate as to have the disease

in this country for any length of time, you, gentlemen, will have to take a share in the investigation of it. I have dwelt longer on this subject than I at first intended, but its importance must be my apology for so doing.

I now wish to impress upon your minds the necessity of devoting your time and energies to the pursuit of that knowledge you came to this institution to acquire, and which I shall endeavour to describe.

Means, no doubt, have been provided for you to attend this College, and if possible to obtain your diploma; in some instances perhaps when the money could not very well be spared, but at all times with a hope that it will not be squandered in trivial amusements or in unworthy pursuits. Remember that unless you obtain the object for which you enter this institution, so much time will have been lost—"time lost can never be regained"—time, you will recollect, is said to be the "stuff that life is made of." I may also remind you that you are responsible to your teachers for the advance you make in your studies; for unless the pupil is attentive and endeavours to profit by that which he hears and is shown, the teacher may strive in vain, his efforts will be futile, and he will run the risk of being accused of neglecting his duty, when in reality the fault rests, and may be wholly due, to inattention, and perhaps something worse, on the part of the accuser.

And, further, let me seriously impress on your minds the responsibilities you are under to the profession you are about to enter. Those who have any regard for its welfare, and are desirous that it should advance, cherish the feeling that such will be accomplished by the rising generation of veterinary surgeons, and in each succeeding year they look anxiously forward with the hope that the attainments of the pupils that are to form a part of the body corporate will be a step in advance of the preceding year. If our desires did not aspire to this advance in our art, the doings of all of us could only be compared to a horse in a mill, starting from one point and coming round to the same again, not having risen one step higher. Rather than this we ought to have in our minds, when reflecting on the time at our disposal and our relation thereto, a spiral staircase, on which, as we pass step by step, round the same vertical line, we ascend above the level from which we started. This would be progress. The continually going round in a circle would not, in the sense I would have you entertain this idea, be progress at all. Then again, above all other responsibilities, you are responsible to your Creator, who has given you faculties far above those

possessed by any other creature He has created. These high attributes should be respected on account of the source from which they originate, and used, as we think they must have been intended, for the benefit of each other and the preservation and comfort of those animals we have by our superior powers domesticated for our purpose in various ways. Surely, man ought not to abuse or turn those endowments knowingly to a wrong use, nor neglect to train them for the purpose of acquiring knowledge wherewith to accomplish these intentions. Each individual must of course direct his energies more especially to the particular avocation which circumstances may have placed him in, all tending, however, to one great end.

The practitioner of human medicine devotes his mind and energies to the relief of suffering humanity, and through his knowledge of the laws of organic life, he points out (that is if he properly fulfils his mission) those hygienic and sanitary measures that are best calculated to preserve health. The veterinary surgeon has a similar duty to perform with regard to the lower animals; and as such animals both grow and are nourished by the same laws, and in the same way as the human species, if a due amount of sustenance is not supplied to them they waste and die as you would. Influences, varying according to circumstances, affect their health as with us, they have their likes and dislikes, and are rendered comfortable and thrive, or uncomfortable and unthrifty, according to the usage they receive from those who have the charge of them. They are subject to diseases, most of them similar to those which we suffer from, and are governed by the same laws as those we are under; they are also cured, if curable at all, by agents of the same nature. Lesions of structure, whether accidentally acquired or intentionally produced, are repaired by the same processes; these processes are retarded or facilitated by the same judicious or injudicious management. In fact, I believe that the same treatment in principle is applicable alike, both to the biped and the quadruped. Therefore, for the veterinary surgeon to be as successful in practice as the human surgeon, he must be equally scientific. It must be so. I cannot understand how it should be otherwise, if science, as applied to medicine, is of any use at all. Again, we know that a high amount of knowledge is thought to be necessary for the practitioner of human medicine, wherewith to enable him to practise his profession with safety. It has been determined, and by experience I should think, that it is imperatively necessary, that each canditate for a diploma shall, before he presents himself for examination, have attended during four

years the lectures, demonstrations, dissections, &c., of some recognised school, and have passed the prescribed preliminary examinations, before he can present himself for his final examination. I mention these things, in order that you may see the necessity of losing no time in applying yourselves to the task you have undertaken.

The next thing to consider is how is this object of your ambition to be reached, as, comparatively speaking, the time is short; nevertheless by steady perseverance you will reach the goal for which you strive. He will not be the first man to reach the end who flatters himself that by quick impulse he can easily make up that which ought to be gained by perseverance. Such men are often outstripped in all that is useful, by the plodding man of far inferior ability, but of steady purpose. "A cripple in the right way" says Bacon, "will beat a racer in the wrong," and you may receive the same instruction from the fable of the "Hare and the Tortoise," written long before Bacon's time.

As with training the muscles, so, no doubt, much can be done with the intellect; to reason upon and think things out in his own way, and to interpret his experience by his own mode of thinking, is the province of the man of science. "The mental, like the muscular powers, are improved only by being used. The faculties are called into no exercise by doing a thing merely because others do it, no more than by believing a thing only because others believe it. He who lets others choose his plan of life, has no need of any other faculty than the ape-like one of imitation. He who chooses his plan for himself, employs all his faculties. He must use observation, reasoning and good judgment, as well as activity to gather material for decision and discrimination to decide, and when he has decided he must possess firmness and self-control to hold to his deliberate decision."

Most, indeed I may say all, of you have arrived at that age when it is important to begin to know yourselves, to try and understand your own mental powers, to commence using them for purposes greater than you have hitherto had occasion for, to train them to reason correctly, and if found weak to strengthen them by culture.

I have now arrived at that part of my subject upon which I have thought I might dwell at some length without being tedious. I will now introduce to your notice the duties which you came to this Institution more especially to devote a great part of your time to, with a view of acquiring that amount of knowledge which is supposed to fit you to practise as veterinary surgeons. Let me, however, first say a word or

two about this said "*practice.*" I trust none of you will be contented to be simply called a *practitioner;* there will always be plenty of such gentlemen as long as the public are sufficiently gullable to be duped by them. It is not uncommon to distinguish a veterinary surgeon from one who has no diploma by describing the latter as a *practitioner;* by which is intended to be understood a person practising without a diploma; but as they both practise that which should accomplish the same object; the public may be induced to look upon them as professionally the same, and so, by calling a non-certified man a practitioner, to distinguish him from a veterinary surgeon, our object is defeated.

Then, again, consider the term as applied to veterinary surgeons only; which we can have no objection to in this sense; but in a scientific point of view a great error, to my mind, is often committed, and from which a wrong inference is frequently drawn. It is said that such and such a man "is a good practitioner, but he is not a scientific man;" or, again, "such a person is scientific, but he is not a good practitioner." Now, I can understand that a man may be scientific, yet not a good practitioner, but I should be puzzled to know how any one can without the light of science, be a *good* practitioner. A reference to the two terms will I think satisfy any one on this point.

I have made these remarks with a view of stimulating you to acquire, during your pupilage here, as much knowledge (*i.e.* science) in every branch of your studies as you possibly can, so that when you commence the practical part of your profession, you may not make those blunders we have so much reason to think are often committed by the non-scientific; and also that as you acquire practice—which means doing a thing many times, without reference to whether it is done right or wrong—you will become scientific practitioners.

The next subject I shall allude to, and one which is of great importance, especially at the commencement of your studies, is the necessity to understand what, in the different animals and under various circumstances, are the signs of health; for unless you have some knowledge of these, you will be unable to appreciate the phenomena of disease.

The phenomenon of health in different animals, with all its phases, cannot be taught in the lecture room, although many of the visible functions in the living animal can and will be there alluded to; but there are so many points in the behaviour of one animal so markedly different from another, and also that indescribable something in the expression of each when in health, with its modifications depending upon

the temperament, that it is only by carefully watching animals under all the usual circumstances in which they may be placed, that healthy function can be interpreted.

Many of you may have been familiar with the habits of most of our domesticated animals throughout the greater part of your lives; to such my remarks do not wholly apply, but I allude more especially to those who may not have had this opportunity, and to such I would recommend that they avail themselves of every chance of studying the habits of healthy animals. The practised eye of even the experienced servant will at once detect the slightest deviation in the health of the horse, or other animals he may have the care of; and so the veterinary surgeon, when going his round amongst his patients, will notice without much examination the slightest indications of relapse or returning health. This fact you will have plenty of opportunities of witnessing, and the power of acquiring in this institution.

I will now, gentlemen, give you an outline of the usual course of lectures and other instructions provided by the Governors of the College, to which it is expected you will attend. Indeed it will be necessary that you should do so to the satisfaction of the professors, before you are eligible to present yourselves for a preliminary examination, which, should you pass, will be the passport to your final one for the diploma of the Royal College of Veterinary Surgeons.

The senior portion of the class are already aware of the daily duties, but for the information of the junior students, I may inform them that three lectures daily, with the exception of Saturday, will be given, when there will be only one; and that during each day there will be demonstrations on anatomy in the dissecting room. I may also add that you will have the benefit of a large Infirmary practice, when attending which you will receive clinical instructions.

The lectures will be as follows:—Every morning at a quarter past nine, except Saturday, there will be a lecture on Anatomy; at eleven, alternately a lecture daily on Cattle Pathology and Chemistry; at one o'clock, four days in the week, a lecture on Physiology, and the Pathology of the Horse. Such is an outline of the lectures; they will embody, however, other divisions of science, which will be alluded to by each professor, in his particular department, at the commencement of his course.

It is customary, in the Introductory Address, to allude to the importance of each division, and offer a few hints as to the best mode of studying them successfully.

It rarely occurs, I believe, that an introductory lecture to

a class of medical students is given, without the importance of a thorough knowledge of anatomy being impressed on their minds.

Anatomy is no doubt the foundation of medical knowledge. It is the light by which we can get to understand physiology and pathology, or the science of normal and abnormal functions.

In a surgical sense it enables the practitioner to perform his operations with confidence, and to predict with some degree of certainty what will be the result also when he meets with cases in which there is a loss of function without, to the common observer, anything to account for it. The mind of the anatomist will most likely be led directly to the seat of the lesion; congenital deformities are, by operations, often restored to a desired form, which would never have been accomplished without a knowledge of anatomy. In fact, there is scarcely any procedure in the practice of our profession, either medical or surgical, to which anatomy does not lend its aid. If the case is a surgical one it points out the locality and relative position of important organs, enabling the operator thereby to proceed with safety to the patient. Anatomy signifies the art of separating, by dissection, the structures of which organized bodies are composed. It is divided into human and comparative anatomy; the latter referring to the anatomy of the lower animals. This division is also called zootomy. It is likewise divided into general and descriptive anatomy; the former treats of the nature and general properties of the component textures of the organs of which the animal body is composed, while the latter has reference to the organs themselves—their relative position, and natural relation to each other. Anatomy is learned in the dissecting-room, and those who are desirous of becoming proficient in this branch of study, and it is necessary that all who intend to practise the veterinary art should be so, must make the dissecting-room almost their home. There, indeed, all their leisure time should be spent, not in idle talk or in frivolous amusements, but in acquiring anatomical knowledge, a little of which gained every day, will, at the week's end, amount to a considerable quantity, and in the same ratio at the end of the session much of the details of anatomy will have been learned.

The senior pupils of the class will, if they take my advice, lose no time in recommencing their labours in this department, and endeavour, during the first two thirds of the session, to acquire, in addition to their former knowledge, as much anatomy as may be deemed necessary for the ex-

aminations. The last third of the session will be required to work up all those points which may have partially, or wholly escaped the memory.

Addressing myself now to the junior students, who have for the first time, perhaps, entered these walls, I would ask to be allowed to congratulate them upon the taste they have shown in choosing this profession, and to assure them that if they apply themselves steadily and perseveringly, they will, with comparative ease, surmount those difficulties which at first appear to be insurmountable, and at the end of the prescribed period of study here, they will arrive at the goal of their present ambition with ease. I would now, although I may have to repeat it, say, go to work diligently and honestly, with a view of gaining the prize.

The study of anatomy may be at first a dry, unpleasant one, but as you begin to feel an interest in it the dislike will pass off. I know of no study so fascinating as comparative anatomy, except it be physiology, and that can only be studied to advantage by first being thoroughly versed in anatomy.

A word or two, now, with reference to the best mode of acquiring a knowledge of descriptive anatomy.

Like all other studies, it should be systematised, by dividing the whole animal body into parts, with a view to study carefully each division separately: these will gradually and imperceptably link themselves again into one united whole, and you will, to a great extent, unexpectedly have accomplished your task. You will, however, be subject to disappointments, for after the lapse of some time having, as you think, mastered one of the divisions of this science, you will find that the knowledge has wholly, or partially, vanished from your mind, and that you need to go over the subject again, and perhaps again. But you must not be downhearted by such disappointments, for if your labour should be like kicking a ball twenty yards up a hill, and it rolls back nineteen, still you will find that you have gained one yard.

Getting knowledge in this way may seem hard but so acquired it usually stays permanently fixed on the mind. I can assure you that irksome and dispiriting as this process may be, you will nevertheless experience the highest satisfaction in having succeeded in your efforts, your confidence will be strengthened for further difficulties, and a general influence on your professional character will be experienced.

Bones form the sole basis or framework of the animal body, therefore it is usual for the junior students to study them first, and I would also recommend those that have already

spent one session at the College to refresh their minds by studying them again. Time so occupied will not be wasted, I can assure you. This division of your study is termed osteology. After having studied each bone separately, and having fully understood its peculiarities, you will next consider the bones as a whole. When connected together by their proper ligaments bones constitute what is understood as the skeleton, the study of which is termed *Skeletology*; and that of the articular ligaments, the medium by which they are severally connected one to the other, is termed *Syndesmology*. This may be advantageously studied after having finished the descriptive anatomy of the bones.

Myology, or a description of the muscles, will, according to the usual plan of procedure in this school, claim your next attention, and when you consider that these organs are the active agents of locomotion, respiration, expression, and some other important functions in the animal economy, you will at once see the importance of this division.

The descriptive anatomy of muscles has reference to their position relatively with each other, and to adjacent organs. Their formation, texture, whether coarse or fine, their colour and consistence, and that which seems to bother the student most, their attachments to the organ they arise from and are intended to move, will all have to be mastered.

At the beginning of this division of anatomy the student will often say, what advantage can possibly accrue from knowing the precise origin and insertion of all these muscles? My answer is, and he will find it to be true, that when he gets into practice he will meet with cases in which he would not be able to interpret their phenomena, or describe their primary causes, without such aids.

Many instances might be cited in which paralysed muscles have led the practitioner to the primary seat of the disease, which may have been some distance from the part visibly affected. Again, luxation, or the displacement of one bone from its articulation with another, is in many instances accounted for through a knowledge of the anatomy and physiology of the muscles, and so also are the means of reducing these displaced organs. Fracture of bone is often accounted for through an excess or deficiency of muscular action. Many other illustrations might be cited of the importance of a thorough knowledge of the science of myology, but every division seems equally important when rightly considered.

You will observe that I have very briefly alluded to bones, muscles, and ligaments, the passive and active organs of

locomotion. Now the maintenance of these organs suggest the necessity of a nutrient material being conveyed to them, and also that the refuse, the result of wear and tear, should be removed, for it is obvious to you all, that if something is constantly added, that something, thereby displaced, requires to be removed. It is stated that "during the early life of all organized beings, and during the entire life of a certain number of them, the quantity of matter fixed by the organism exceeds to some extent that which is rejected, and from this the growth of the individual results. In the adult these quantities are usually exactly equal; hence his stationary condition. In the aged, finally, the force of decomposition gains the upper hand. But whether the loss and gain balance each other, or whether the one or the other is in excess, the double movement of arrival and departure never ceases." Provisions for this purpose are supplied by the heart, which is a sort of pump, connected to a series of tubes termed arteries and veins, and indirectly to a number of other small ones called absorbents. By these conduits, a fluid called blood is sent by the heart to all parts of the body through one set of tubes called arteries, charged with material for the support of the tissues, and then, after being altered in quality, and also in quantity, it returns again to the heart to be transmitted to the lungs, there to be revivified; after which it returns again to that part of the same organ from which it first proceeded. In its passage from the arteries into the veins the blood has to pass through a set of very fine vessels, termed capillaries, and it is here that the change referred to chiefly takes place. In those of the lungs the blood becomes reoxygenated, while in the systemic capillaries, it becomes again impure and requires to be again revivified before it is fit for the further purposes of life.

This brief and very rough outline of the circulation is not put forth by any means as a scientific explanation of the circulation of the blood, but merely for the purpose of exciting in the minds of the junior pupils, a desire, and a strong one, I hope, to know all that is known about the circulation of life's stream.

The machinery to carry on these two important circulations, the one from the heart to all parts of the system and back again, is termed the greater or systemic circulation, while that from the heart to the lungs and back again to the same organ, is designated the lesser or pulmonic circulation; It is so beautifully arranged for these purposes that the dullest student cannot but be interested in it. If this is so, what must be the feelings of the enthusiastic investigator in

the study of anatomy and physiology. The heart, for example, with its four chambers—two on one side and two on the other—often described as a right and left heart; its strong muscular walls, the fibres of which are so arranged as to produce that peculiar rythmatic action during their contractions; the beautiful valvular apparatus to prevent the reflux of the blood, thus securing its course in the proper direction, must strike any one with wonder.

The enthusiastic student is further excited when he examines the tubes which convey the blood to and from the heart, the arteries especially, with their thick elastic coats, so beautifully adapted to break the shock of the current of blood forced into them by the thick muscular walls of the ventricles of the heart; and further away from this organ he cannot but admire in the smaller arteries the substitution of muscular or contractile tissues, for that of elastic tissue in their middle coats; but this you will not be able fully to appreciate until you are somewhat advanced in physiology, nor will you that of the capillaries, a fine network of tubes, into which the blood passes when it leaves the arteries. Following the course of the blood from this beautiful network of very fine vessels, we trace it into the veins which conduct the blood back again to the heart. Here you will also see in the interior of these tubes a number of little flaps or valves, which prevent the reflux of the blood in these vessels. You will find them very numerous in some, where the blood has to ascend against gravity, more sparingly placed in others, and in some veins there are none at all.

These are objects which cannot fail to call forth our admiration, and to excite a desire to investigate and know all, and, if possible, more than is known, about them.

The lymphatic and lacteal vessels also, and that apparently subordinate circulation connected with the liver, the portal circulation, and other abdominal viscera, will richly pay for the time you will necessarily have to bestow upon them.

Take another very important division of your studies, namely—the organs of respiration.

No animal can live without breathing; the blood would not be reoxygenated, or decarbonated, which, for an animal to exist and enjoy health, it is important should be regularly and efficiently performed. The contrivance for this purpose is very beautiful, yet, when known, apparently simple. You will best appreciate it when you come to understand the anatomical arrangements for the admission of a due amount of air to the lungs, the means by which it is expelled from them, and the chemical change that it there undergoes

These subjects are of the greatest interest to the pathologist.

If the time allowed for the delivery of this lecture admitted, I should indulge in expatiating on the importance attached to a thorough knowledge of the anatomy, and pathology, of the organs of respiration—it concerns us in various ways. We are supposed to be able to judge of the qualities of a horse, for many purposes, by the capacity he has for breathing; we have often to judge of his normal or abnormal condition by determining the power of the lungs to admit air through all their parts. In law courts, also, we have very often to give our opinion as to the nature of disease in these organs, and its duration. One affection in particular, *viz.*, "whistling," or by some called "roaring," names given to sounds according to their quality, demands the especial attention of the veterinary surgeon.

Gentlemen, as time will not admit of my dwelling on these subjects any longer, I will next endeavour to excite in you a curiosity or, perhaps, to some of you the necessity of acquiring a fair amount of knowledge of the anatomy and physiology of the organs of digestion; the assimilation of that part of the food which is to be of use in the animal economy, and that which is to be excreted as effete.

Now, I trust that you will not think that I wish to insult your common sense by stating that which every one knows full well, namely, that every animal requires, for the support of its life, a proper amount of suitable food; but it is not every one who understands how, when it is taken into the system, it is prepared, and in its passage through the alimentary canal, what changes take place in its constituents. This is a lesson for you, gentlemen, to learn; you will have to understand the machinery used for taking it into the mouth; the influence the secretions, which are poured into the mouth from certain glands, have upon the food; its passage into the stomach, and the change which it undergoes in that organ, with its passage into and through the intestines; the effects the secretions of the liver, pancreas, and the intestinal glands, will have upon it; the separation of the effete from the nutritive materials, and its passage through the lacteals, and from the latter into the blood-vessels, to mingle with, and replenishthe stream of vital fluid.

As far as descriptive anatomy is concerned I might go on in the same way briefly alluding to most of the organs of the body, but I hope I have said enough to excite in you a desire to prosecute your studies with an earnestness that will make you proficient in this division of science.

I ought, however, to say a word or two on an important subject, which unless fairly understood, the practice of medicine and surgery would be empiricism indeed. I have reference to the nervous system, or systems, for in mammalian animals two systems are recognised; not so, however, in the lower forms of animal life, in which but one exists; and in the very lowest no nerves have been detected.

The study of the anatomy and physiology of the nerves and their centres is very pleasing, but in my opinion you should make yourselves theoretically acquainted with the nerves, before you commence tracing their course and relations by dissection; you will then work at the investigation with a greater zest, and will better comprehend the facts, and also the theories that have been advanced with regard to their peculiarities.

I have told you that in the higher mammalia two systems of nerves are recognised. They are:—first, the cerebro-spinal system, which includes the brain and spinal cord, and the nerves connected therewith; and secondly, the sympathetic, so called because it is supposed to produce a sympathy between the affections of different parts, or, as it is often termed, from the number of small knots or ganglia upon its trunk, the ganglionic system, and sometimes also it is called the organic system of nerves.

The brain, spinal cord, and ganglia are so many centres which receive impressions conveyed to them by nerve fibres, and they also generate a force which is transmitted by other fibres to organs, as the muscles, which they excite to action. This is termed simple reflex action; a phrase not very long in itself, but of considerable significance in a physiological, and also in a practical point of view.

This important division of your studies, viz., the nervous system, which, as it were, unites all the organs of the body into one harmonious whole, and keeps the animal machine in operation, cannot be otherwise than interesting; nay it must be more than this; consider that the respiratory movements would cease without a supply of nervous force; that locomotion, the circulation of the blood, the action of the stomach and intestines, would also cease, as would many other functions essential to life and enjoyment, if the nerve centres failed to perform their normal functions, or the nerve cords to transmit the force they generate.

In leaving the subject of descriptive anatomy, you will not suppose that I have enumerated all the divisions you will be required to understand; there are many others which will especially claim your attention, but I must hurry on to the

consideration of some other matters equally important. General, or Structural Anatomy, is a subject of vast importance both in a physiological and practical point of view, indeed the former cannot be comprehended without a knowledge of the elementary parts of which the tissues are composed. This science, which is called histology, forms a part of the pupil's study, but usually not until he is somewhat advanced in other divisions, particularly descriptive anatomy, can it be prosecuted with advantage, and then only by the aid of the microscope, an instrument now-a-days in the hands of almost every one who has any pretensions to scientific attainments. To be sure you will be able to acquire it to some extent theoretically from the books you may read and the lectures you will hear in this institution, and which of course will considerably facilitate the acquirement of this kind of knowledge; but to understand the minute structure of the tissues of the several organs composing the animal body, and to be able to appreciate their importance, you must investigate and see them for yourselves, and having done so the knowledge you will have gained will be your own.

A description of things and places only gives one an idea of their physical properties and proportions, but when seen they become actual realities to the mind, and are so indelibly impressed on the memory that they are not likely to be soon forgotten. A traveller may give a lucid description of the places he has visited in some foreign country; a microscopist may minutely describe the structure of the dentine or enamel of a tooth, or that of the compact structure of a piece of bone, but no description will be sufficient to fix it on the mind, or to lead to a knowledge as to how it is nourished.

Further to illustrate the value of microscopical anatomy, take the blood and the capillaries through which it has to pass. The former, to the unaided eye, while in a fluid state appears to be homogeneous, but if a very small portion is magnified it is found to be composed of parts dissimilar to each other. The microscope brings to view red and white corpuscles, floating in a nearly transparent serum, the red ones very numerous indeed as compared with the white, and smaller, the former being a trifle over $\frac{1}{4000}$th of an inch in diameter, while the latter are about $\frac{1}{3000}$th—I have now reference to the blood of the horse,—but as these corpuscles are flattened discs they are only about $\frac{1}{12000}$th of an inch in thickness.

Now, the capillary vessels through which these bodies have to pass are so very small, particularly in places, for instance, in the brain, spinal cord, and lungs, that they can only pass in

single file, the danger of their progress being arrested is seemingly very great. To assert that any one can understand the condition of a piece of inflamed mucous membrane, or brain, or spinal cord, or lung, as well from description as though he had seen and examined the structure microscopically for himself, and also the blood discs which have circulated through the vessels, is to my mind to assert that which is not correct. It would be as reasonable to say that a person might remain shut up in his study all his life, and yet understand from description all the peculiarities of the streets of Pekin, and the inhabitants that pass through them.

In setting forth the value of the microscope as an aid to the study of structural anatomy I hope I have said enough to tempt you to desire to get further and more reliable information on the subject, and thus induce you to procure an instrument for yourselves. Suitable microscopes of a sufficiently high power to examine most of the structures of the body, can be obtained at the cost of a few pounds and if you purchase some objects of the hard and soft structure already prepared for use, and which can be bought for a shilling or eighteenpence each, you can very soon become tolerably familiar with the minute structure of most of the tissues of the animal body.

I ought also to mention before leaving this subject the great advantage that has arisen from the use of the microscope in the study of the structure and mode of propagation of those parasites, which infest the animal body, and which are so important for the veterinary surgeon to understand.

Whether knowledge thus obtained will ever assist in devising means to render animals secure against their invasions it is impossible to say; at the present time but little is known of this nor indeed as to how parasites are to be got rid of when they exist in animals; the latter, however, is better understood than the former.

These studies can be carried on during what are usually called leisure hours, but, gentlemen, you have no leisure time to dispose of, the rest you should have is a change from one subject to another. Can you doubt for a moment that the mind can be better preserved for intellectual pursuits than by moderately employing it in acquiring that which is useful?

The study of that which is worth knowing becomes food for the mind, and thus it is said by men who meet together to discuss some scientific question, that they have had an intellectual feast. I am not suggesting that you should

always be at your studies; you will require time for the physical exercise of your body, taking your meals, and for sleep, that sweet restorer of both the physical and mental powers.

Let me tell you, gentlemen, that the brain will think—such is its function—and if it is not thinking about one thing it will about another; you must think, but choose that to think about which is most useful and at the same time most needed. I know you will excuse these remarks, for they are made for your benefit; they are deductions drawn from the fountain of experience.

Now I must proceed to speak to you on some other topic, namely, physiology. Anatomy reveals to us the structure of the animal body in a passive state, physiology, on the other hand, teaches us to contemplate and search into the same structure, but in an active living state. By the aid of physiology we endeavour to unravel the mysteries, as far as our genius and industry will allow, and although our mental powers far exceed those of any other beings, still we do not proceed far in our research into the laws of nature before we meet with the fiat "so far shalt thou go and no farther." This should be no barrier to investigation. We shall only know when we have arrived at this point by our not being able to proceed any further, for at present there is no defined line drawn at which our inquiries shall stop. Physiology is founded on anatomy and that which is termed *comparative*, has no doubt lent much aid to this division of science.

Physiology treats of the conditions, phenomena, and laws of the life of an animal body in a state of health. The first and most important of these phenomena are digestion and assimilation, by which the food taken into the system is elaborated and fitted to be disposed of by the process termed absorption, while the useless portions are excreted from the system as fæcal matter.

To the veterinary surgeon I know of no process in the animal economy that requires to be better understood than that of digestion and the laws which govern it.

If we study our own interest and that of those upon whom we depend for support, we shall take care to point out to them the most suitable kind of food for each variety of animal they may possess, and also the best method of preparing such food before it is given.

This may seem no part of a veterinary surgeon's duty; it will perhaps be said by some, it is only with disease that he has to do. To this I demur. *Hygiene*, or the preservation of health, is as much a part of our duty as curing disease, and even

more so, and I hope the day is not far distant when the owners of stock will listen to the voice of science in this respect. The things to be learned in relation to the function of digestion are, first, that when food is taken into the mouth it is masticated, which involves a knowledge of the masticatory apparatus; and next, that it is insalivated, to understand which the salivary glands, the quality of their secretion, and the effect it has upon the constituents of the food, are important matters for consideration, and when fully understood will I think induce many of you to question the propriety of artificially preparing a great deal of the food of the horse, as is now so generally recommended.

Next to mastication, and insalivation, will follow the physiology of deglutition; and the nature of the action which the secretions of the stomach have upon the food after it has reached that organ. The chymous mass, as it is now called, on leaving the stomach passes, as many of you are aware, into the small intestines, but it does not proceed far before it is submitted to the action of the secretions of two important glands, viz., the liver and pancreas, whereby it is prepared for the important purpose for which it was taken by the animal. To properly understand these processes you will have to call to your aid the science of chemistry.

Next in importance is the absorption of that part of the food which is to nourish the body, and the mode by which it is conveyed into the circulation to supply this end, and the removal of that which has become effete.

To fulfil these intentions, circulation, respiration, cutaneous excretion, and nutrition are subjects that will require your earnest consideration.

I shall next speak of pathology, a branch of medicine which investigates the nature of disease by diligently searching for the origin and invasion of any particular malady, and also the effect it has on the health of the animal it attacks. Disease is to be understood by the symptoms it produces in an animal, and the change it effects in the structure of any particular organ or in the whole body. These are subjects, which, if honestly investigated, must furnish us with useful facts that will displace the speculations of theorists.

To be proficient as a pathologist you will need, as I have before stated, to be well acquainted with health in all its phases, for there is no immutible standard for the condition of the body of any animal. A horse, for example, may be in vigorous health, fit for a four-mile race, or on the other

hand the same horse may be in good health, but unfit for an ordinary gallop. Again a horse may be constitutionally weak, fit for but little work, yet in good health.

The same variations in the physical condition of the body will occur in many animals, without their being actually in a state of disease; therefore it behoves us to understand the phases of health, before we can comprehend deviations from it.

Having distinguished actual disease when it has once invaded the animal body, the mind then wants to understand the advance it is likely to make, and the structural injury to organs it is likely to effect, if it continues unchecked in its progress. Here structural anatomy and physiology offer good assistance, for, by a knowledge of the precise structure of organs, and the laws which govern them in a healthy state, it becomes comparatively easy to predict what the results must be if the laws of health are in abeyance. I think, gentlemen, if you reason on these subjects somewhat in this way you will arrive at a basis upon which to found a rational treatment of disease.

The morbid changes which take place in the body during life, and which are to be demonstrated by making examinations after death, constitute morbid anatomy, or pathological anatomy. These morbid changes must be studied in relation both to healthy function, and healthy anatomy.

Further, the determining the elementary changes that may have occurred, or the development of any new products produced, constitutes morbid histology, and will require the aid of the microscope and very often chemistry, to study it satisfactorily. Indeed it cannot otherwise be done, for without such appliances it would be mere guess work.

Independent of the lectures you will hear on these subjects, you will have a good opportunity of acquiring this knowledge, if you will only avail yourselves of the opportunities that are offered. In the infirmary you will be able to trace the progress of diseased action, often from its commencement to its termination in resolution or dissolution, I should hope the former far most frequently. Upon these points you will have an opportunity of hearing the remarks of your teacher; you can also, if you desire it, examine for yourselves the morbid products of disease.

I know of no other place that offers the same facilities to prosecute pathological anatomy of the lower animals as this institution.

The preceding remarks lead me to that division of your profession to which all other branches of your studies are to

prepare you, and which, if you are to be successful, must not be neglected, *viz.*, the practice of veterinary medicine and surgery.

You have now to study the symptoms or signs of disease in the animals you have under your care, to endeavour to convert your theoretical into practical knowledge, and as far as possible to understand the best method of curing your patient by the application of appropriate remedies. When you reflect on the responsibilities you are under, some of which I have before alluded to, I am sure you will lose no time, nor neglect any opportunity of acquiring this information. The advantages you will have in seeing disease in horses and some other domestic animals, such as cattle, sheep, pigs, dogs, &c., but especially in the former, are so extensive that if you avail yourselves of them you cannot fail to acquire considerable practical knowledge.

Many of you are no doubt imbued with preconceived notions respecting the treatment of disease, some of which will very likely harmonize with that you will see adopted here; but whether it is so or not, endeavour to imbibe correct principles, which will of themselves displace error, should it exist, without any effort on your part.

The practice of veterinary medicine, as an art, can only be learned by close attention to the infirmary practice, and by watching the progress of disease, to minutely note its various peculiarities. The mind must be trained to comprehend the symptoms, and endeavour to interpret them, the ear to understand the varieties of abnormal respiratory sounds, the finger to detect the healthy character of the pulse, and the eye to catch every expression, and also the general character of appearances that are indicative of disease or even of disturbed functions.

You will do well also to compare the symptoms of disease as exhibited at different periods of the day, and likewise under different conditions of the temperature of the atmosphere.

This knowledge is very important, and when I see a pupil going round the stables in the morning, and again the last thing in the evening, taking notes of what he observes, with reference to the cases under treatment, I at once put such a man down as one whose career will be successful. The same student will be found foremost amongst those that attend the *post-mortem* examinations, anxiously seeking to discover the cause of the death of the animal he had so long and diligently watched.

The professors, when going their rounds to visit their patients, are accompanied by two clinical clerks, who take

notes of the symptoms and condition of each case, and also the treatment that is ordered for the day. This can be done by all in succession if they think proper, and I would strongly urge them to do so.

The professors will also, particularly on special occasions, make remarks on the nature of the disease of each particular patient, giving reasons why they adopt such and such kind of treatment, the effect they expect it will produce, and their prognosis as to the result.

Should a patient die, a *post-mortem* examination is instituted, and the lesions which caused death explained; which those who have kept a register of the symptoms from the commencement would do well to make notes of, as in this way they will complete the history of the case.

The examination of horses as to soundness forms an important part of your study, and the opportunities you will have in this department are very extensive, as large numbers of horses are continually being brought to the College for this purpose.

Gentlemen, you will find very much to occupy your attention in this division of your labours, indeed labour it is not, it is a relaxation from mental occupations. The exercise you will take in the College Square, in observing these examinations, amounts to recreation; but you must take considerable interest in observing each examination, and habituate yourselves thereby to go through its details systematically.

The whole subject, is well worthy of great attention; and I feel assured, if the anatomy and physiology of respiration, the character of the various sounds, both normal and abnormal, were uniformly better understood than they are, there would be fewer disagreements among the members of our profession. There are many other points I could adduce on the subject of examination of horses, and some even stronger than those I have referred to, but I hope I have said enough to create in your minds a desire to study the matter thoroughly, and to make yourselves masters of it in all its details. You will find that a thorough knowledge of anatomy and physiology will materially assist you in this division of your studies.

The impressions conveyed to the mind when looking into the diseased eye of the horse, or when investigating the respiratory movements during abnormal respiration, or when placing the finger on the artery during the abnormal action of the heart, or upon an exostotis at the usual seat of bone spavin, or indeed in any other situation, or when applying

the ear to the side of the thorax listening to the abnormal respiratory murmurs of the air in its passage through the bronchia, or to the sounds of the heart when it is functionally deranged, will, I am sure, be far better understood by the scientific than they possibly could be by the unscientific observer. By practice the latter certainly is able to say this or that is unusual, but, except by tradition or a long life of observation, he can form no idea upon what the abnormities depend, nor whether they are temporary only, or are likely to remain permanent.

Science enables a man to comprehend abnormal action, and fits him to practise his profession comparatively early after getting his diploma.

Art, however, is only acquired after long practice; in fact, only by seeing, hearing, or doing a thing over and over again. It must be admitted, therefore, that while science enables a young man to commence practice with comparative safety almost as soon as he leaves college, art can only be employed with any degree of safety by those who have had very long experience. Such, to my mind, is the difference between science and art. The difference, you will see, is very great and very important; but if you can combine science and art, without deteriorating the former, you doubtless will be a safer practitioner; but, unless science is carefully preserved in the mind, as paramount to art, it will be neglected, as the latter is more imitative and requires less tax on the memory.

In the introductory lecture of 1861, which I had the honour to deliver, I alluded to veterinary surgeons having forges, which I then considered to be prejudicial to the best interests of our profession, as the two are no more connected with each other than human surgery is with the making of shoes for the human being. Further observation has very much tended to confirm the idea, and I am glad to learn that the desire to do without forges is gaining ground. Some will still contend that it is necessary to understand shoeing horses, in order to direct how shoes should be made and fastened to the feet, to give instructions how lameness is to be prevented, or, when it has occurred, how, as far as the shoe is concerned, to afford relief.

I am quite willing to grant all this, but I still contend that the educated veterinary surgeon is far more able, from the knowledge he possesses of the anatomy and physiology of the foot, to suggest plans for the construction of and nailing on shoes to the feet of horses, based upon scientific principles, than the farrier is; and to acquire this knowledge,

there is no need whatever to learn the mechanical part of the art. If the veterinary surgeon carries on the business of the forge, then, in a commercial point of view, I will allow that he is able to conduct it with greater profit to himself if he is a practical shoeing-smith, than he would be enabled without such knowledge. My idea with regard to forges is, that they should be in the hands of shoeing-smiths only; and if the horses become lame from bad shoeing, their owners should seek the veterinary surgeon to cure them.

The shoeing-smith who shoes horses most successfully, that is, without laming them, would, I think, be most patronised, and thus the art of good shoeing be encouraged. I will not, however, dwell longer on this subject, as I cannot bring my mind to believe that shoeing horses is, in any way, a part of our profession, or that we should occupy much, if any, of our time in discussing it more than we should any other mechanical trade. If the science and practice of veterinary medicine and surgery were completely separated from the art of farriery, both callings would be enhanced in respectability. In the horse-shoeing trade there would be more masters, because it would be altogether in their hands, and as a result, they would hold a higher position than the journeyman; in fact, they would rank with other respectable master tradesmen. They would have responsibilities; the journeyman has comparatively none, and it is by making a man responsible for that which he undertakes which raises his character.

The veterinary surgeon would get rid of that which has always tended to drag his profession down to the level of the calling of the shoeing-smith, and depend upon it as long as he shoes horses such will be the case. I have heard noblemen and others, when alluding to some disease in their horses, say, Oh! he was under the care of our farrier, meaning the veterinary surgeon who usually attends his horses, and on several occasions the persons referred to have been the most respectable veterinary surgeons in the metropolis. This has not been said out of any disrespect, or desire to depreciate our professional status, but from never having estimated it above that of the farrier. There are exceptions, I have no doubt, but such is the rule. I think you must see with me that by a complete separation of the two callings both would be raised in the social scale.

I shall next allude to chemistry. A science so dignified

by its intrinsic worth and by the great and noble men who have been its cultivators, that I mention it with diffidence, lest I should in any way undervalue its importance.

Chemistry is a science and an art combined, which, although not much more than half a century old, has made such rapid progress, and has given to man so many useful discoveries, that it now constitutes one of the educational subjects of those preparing for the practice of many of the higher professions. But in pursuance of the duty I am now performing, I must content myself with briefly indicating a few of the more important services which a knowledge of chemical facts and principles has rendered, and is capable of rendering, to medicine.

When I inform you that physiology, therapeutics, pharmacy, and other branches of a medical education, are but ill understood unless you possess a considerable amount of chemical information, I cannot, and I am sure need not, suggest a stronger inducement to you, to assiduously follow the course of instruction in chemistry which you will have the opportunity of attending during your pupilage in this institution.

Although I have referred in broad terms to the importance to be attached by you to chemical studies, I will nevertheless proceed to briefly illustrate the correctness of my remarks, by citing a few examples of the manner in which chemistry gives her aid to those medical men who are desirous of carrying on their pursuit, not in an empirical manner, but in a scientific and rational way, so that their actions may be governed by reason, their self-confidence strengthened, and their position, as well as their profession, elevated in the estimation of the public.

As an example of the absolute necessity of chemistry as an interpreter of physiological phenomena, I may allude to the numerous researches on food conducted by Liebig and others, and more recently by Dr. Edward Smith. These chemists, or rather chemico-physiologists, have used the laboratory with such advantage that they are enabled, by reasoning from the results obtained by conducting innumerable, complicated, and laborious analyses, to give us a clear insight into, and valuable information not merely respecting the composition of the many animal and vegetable substances, used as food, but also to enlighten us upon the peculiar and various offices which the different proximate components of food perform in the animal body. Moreover, the lessons taught by such investigations have been turned to practical account of the most valuable kind—they afford

us information we should never have possessed had not chemistry existed.

Stock-owners, and indirectly the public, have largely benefited from the possession of such knowledge, by turning it to account in assisting them to select the most economical, and therefore the best description of feeding materials, wherewith to rear, keep in health, or fatten their domesticated animals.

Digestion, absorption, assimilation, and excretion, are physiological problems, along with many others, which could not possibly have been solved without chemical aid; neither can the student acquire a true conception of the nature of these processes, upon the maintenance of a normal condition of which the health of an animal depends, unless he is well prepared with something more than the rudiments of chemistry.

The prevention of disease should be, and is, the great endeavour of the modern scientific medical practitioner, whether human, or comparative, and it is only by making himself thoroughly acquainted, as far as possible, with the laws of health, or hygiene, that he can hope to render good service in the channel into which modern veterinary medicine is being directed. When we remember that whether an animal remains healthy and vigorous, or sickens and dies, depends greatly upon the composition, purity, &c., of the food it eats, the water it drinks, or the air it breathes, it will be evident that the science I have been lauding, from the power which it confers upon us of being able to ascertain the component parts of things, should be competent to assist the practitioner of medicine, either human or veterinary, in carrying out hygienic principles. Now, from what has already been said it will be seen that in prosecuting pathological inquiries the available assistance which chemistry affords is of the most important kind; for example—in functionally, or organically, deranged conditions of the kidneys, it enables the practitioner to form a more decided and correct opinion, as to the nature of the malady, than he otherwise could, and to judge better of the progress of the disease under which his patient is suffering, as well as to quickly devise a rational system of curative or palliative treatment. Were I to turn to therapeutics, pharmacy, or toxicology, I could demonstrate how essential a knowledge of chemistry is to the proper understanding and application of these branches of a medical man's education; but as the time permitted for the delivery of this lecture is short, I must

pass on to other topics; and in so doing make a few remarks on subjects which will be expatiated upon more fully by each professor in his own particular department. I shall, therefore, briefly allude to a few points which I feel should be impressed on your minds.

The first of these is dissection—a means to a very important end, and as such I entreat you to prosecute it with untiring energy. The mere tyro in any pursuit will admit that the more carefully any constructed article or machine is taken to pieces for the purpose of studying its parts, with a view of comprehending it as a whole, the greater will be the facility for understanding it. This process may be considered as an anatomical analysis, which, if well performed, and every particular point carefully observed, the whole machine, or constructed article, can be readily replaced again.

The structure of the animal body is studied in the dissecting-room by a process of analysis; separating the several organs one from the other, and carefully noting their form, consistence, colour, and relation to each other.

Each organ, however, is more minutely studied by unravelling the textures of which it is made up, and the way they are disposed of in its construction. Then again, these textures are further investigated, but this has to be done by the aid of the microscope. By such a process of analysis you see we have examined the animal body to the minutest particles of which its tissues are composed.

There is another way of studying the organism of the animal body, *viz.*, by *synthesis;* this, however, you will not be expected to undertake practically during your pupilage, but theoretically you must know something about it. This information you will gain from the lectures you will hear and the books you read. It commences with the study of the embryonic germ, the formation of cells by multiplication and division, the formation of the tissues, and by those of the entire animal. This mode of studying the structure of an animal is also termed histology; it prepares the mind to understand how the tissues are nourished, and reparation is effected.

This I consider to be one of the most important parts of your studies, but you must begin humbly at first in the dissecting-room. The aid you will receive there will be, as I have before stated, from the demonstrator, who will be with you, teaching you how to dissect, and will describe to you the names and relations of organs one to another. Let me advise you to make up your minds to work hard, and to work well, in the dissecting-room.

The better your dissections are performed, the fewer subjects you will need to dissect, and the more proficient you will become in the use of the scalpel, and through it a better operator. None should think of entering the dissecting-room, unless it is to work, either with the head, or hands, or both. An idler has no business in that place, he only stands in the way, and otherwise impedes the efforts of those who are desirous of working. I may remind you that the anatomy you require to know is not confined to that of the horse, for, as other domestic animals will need your attention, both medically and surgically, it is equally necessary that you should also be acquainted with their descriptive anatomy.

Time will not admit us, you will say, to dissect the different kinds of domesticated animals to the same extent; this is very true, but at any rate during your pupilage I should advise you not by any means to omit making yourselves thoroughly acquainted with their visceral anatomy, and as much of that of the other organs as your time will admit. True knowledge is, or should be, the great directing force, therefore endeavour to acquire as much of it as possible. What I mean by *true knowledge* is, that which is acquired by yourselves; all other is comparatively parrot knowledge.

I must now refer to the lectures you will hear in this room, and which I invite you to attend. As I have before told you, each of your teachers will acquaint you with the details of the subjects he lectures upon, and also the importance attaching to them. It is to be hoped that you will give your earnest attention to these matters, for your own sakes, for the interests of science, and for the profession you are desirous of becoming members of; and not for these reasons only, but for the sake of the school you are studying in—perhaps that in which many of your fathers also studied—and the lecturer, who endeavours to teach you theoretically, for such it must necessarily be, that which is to be a guide to you in your future career.

It is my duty, also, to remind you that you must not wholly rely on lectures for all you require to know. You should look upon your teacher as one who has to guide you over a domain he is familiar with, but upon which you have never yet trodden, and when he is conducting you along the untrodden path, you should think deeply of everything he shows or tells you, taking care, however, that the ground is firm before you place your feet upon it. A sage, being asked how he had derived his knowledge, replied, "From the

blind, who never place their feet till they have tried the firmness of the soil. I observed before I reasoned, and I reasoned before I wrote."

Gentlemen, your teachers will endeavour to conduct you in the right path, and upon a firm soil; or, in other words, you will always find them willing to aid you in your studies. Besides instruction of this kind, you have other aids, *viz.*, books, which, from the accumulated knowledge of ages, contain much that is of the greatest value to you; indeed, you will have to rely to a great extent upon these sources for much of the information you will require. In one sense, however, books are far inferior to lectures, as the latter admit of more complete illustration, and in most instances combine description with actual demonstration.

With these helps you will, from the day you enter the College, go on accumulating facts in the various divisions of your studies. For a time they may appear so disjointed, that you will have some difficulty in understanding their relative connection. This must always be. The links of a chain are made separately, but in due time they are one after another linked together into one continuous whole; so it will happen with the facts which you will have made your own by study and deep thought, they will eventually, if the same train of thought and reasoning be kept up, become like the links of a chain united to each other, and as a whole will enable you to fulfil the purpose for which you are preparing yourselves.

To conclude. There is one other subject on which I would say a word. Perhaps in some respects it is scarcely thought of by many of you, and if put into practice would not, I am afraid, be appreciated by the public; nevertheless, if we are determined to fulfil our mission, we shall adopt it and risk the public appreciation of our efforts honestly to do our duty. It may be asked, What is our mission? I would reply, have not the lower animals a very great claim upon our sympathies? and who, I would ask, ought to know how far the physical powers of the horse can be taxed by labour better than the veterinary surgeon, or who better than he should be competent to appreciate the pain these useful and willing animals suffer from the wanton cruelties so often inflicted upon them by the thoughtless, and I may add often cruel beings that use them? or who should better understand the pangs of hunger they in common with other domestic animals sometimes suffer from the want of a proper supply of food? This being so, it is our duty to do all we can to alleviate as far as lies in our power the sufferings of these dumb creatures, and when through disease or accident they are

placed under our care, to endeavour to mitigate their sufferings and free them from their complaints with as little pain as possible.

And now, gentlemen, in drawing this lecture to a close, I feel that I have imperfectly accomplished my task; I trust, however, that I have said enough to excite in you a determination to pursue your studies with unflinching ardour. If I have aimed at too high a standard for my profession, if I have suggested things worthy of being done, but which under existing circumstances are not likely to be accomplished, it has been with a wish to arouse in your aspiring minds a desire to realise greater results and prouder destinies than as yet have been accomplished.

I might have brought before your minds for contemplation the labours of those who have in times past cultivated the science and art of our profession, and have dwelt at some length on the services they have rendered towards its advancement; but I have felt that as progress seems to be a great law of nature I would rather soar higher and direct attention to the future. Much remains to be done, and if we use our faculties and energies as we ought to do much will be done.

Before I close I must in justice to my feelings acknowledge the compliment paid us by the members of the profession who have this day honoured us with their presence. There are those amongst them who are not only full of years but also anxious for the welfare of our profession. Time may have ploughed their cheeks and brows with furrows, and their hair be whitened with the snows of many winters, yet to each the well-known lines may not be inappropriately applied—

> "The time-worn cottage, batter'd and decay'd,
> Lets in *new* light, through chinks which time has made."

CATTLE PLAGUE.

In our last article a typographical error occurred which we hasten to correct, as it seriously affects the question of the date of the outbreak of the disease in Holland. The mistake to which we allude refers to the date on which the Dutch oxen sent to England by Mr. Defries were re-shipped to Holland after being exposed for sale in the metropolitan market several times in the month of June. In the article which heads the October number it is stated that the re-shipment took place on the 22nd of July, whereas it really occurred on July 2nd.

Reports continue to reach us from various parts of the country, shewing that the plague is still extending. In the metropolis the cases are comparatively few, but this is rather due to the diminution in the number of cows than to any decrease in the virulence of the malady.

It would, we feel, be premature just now to offer any remarks upon the inquiry which is being instituted upon the pathology and therapeutics; of the malady there is yet much to be done before any exact conclusions can be drawn, nor do we anticipate that much light will be thrown upon the actual nature of the disease. We may take refuge in the explanation that it is the result of a "materies morbi" introduced into the blood and acting in the manner of a ferment; or we may even demonstrate the existence of vital molecules possessing the activity and reproductive powers of individual organisms; still the grand question returns—How is it that under certain circumstances these living particles in the exercise of their vital functions produce disease and death?

Whatever may be the ultimate results of the investigation we are certain to learn a great deal about effects, if we do not gain much insight into causation, and it is within the limits of possibility that something may be added to the means of prevention and cure.

If we look over the mass of suggestions that have emanated from various sources during the last three months upon the cure of cattle plague, we cannot fail to observe the entire absence of principles, or at best the diversity of the principles upon which treatment appears to have been based. At one time depletives, at another tonics; stimulants suggested by one authority, sedatives by another; and in the majority of instances no reason appears to guide the administration of any agent, except the general idea of preventing prostration by supporting the system, which however refuses to be

supported. The experience we have already had must suggest to us the propriety of adopting a new base for subsequent operations. Presuming we decide upon the propriety of treating the disease at all, and it seems to be the desire of the profession and of the country that it shall be attempted, the first step is to determine what we shall seek to effect.

In treating diseases of the human subject arising from a poisoned condition of the blood, the principle is to eliminate and to support. The supporting system has been tried fully in the treatment of cattle plague, but the eliminating plan has not been, as a rule, conjoined with it. Difficulties of no mean character are opposed to its complete adoption; we may purge, or give diuretics, but these are temporary expedients. The grand emunctories are the follicles of the skin, and without very elaborate arrangements it would be impossible to excite the functions of this tissue into activity; we may, however, do something by external coverings and by frictions to the surface, but such aids would poorly compensate for the injurious effects of a cold atmosphere. One of the most important indications, therefore, cannot be fulfilled. The direction to keep the surface of the body warm would be mere burlesque when applied to a cow in a shed, or if given it would be carried out by throwing an old rug or a few sacks over the sick animal, or indulging it with a more liberal allowance of straw.

In a properly arranged sanitarium, appliances could be adapted to the requirements of the case; but speaking in reference to the treatment of the disease throughout the country, it is perfectly evident that all those adjuncts to medical treatment, included in the term good nursing, are practically inapplicable.

Setting aside, however, any question of the difficulty or impossibility of carrying out the proper plan of treatment, we may suggest what might be done if it could; and without pretending to determine the actual nature of the malady we are trying to cure, we have certain very decided symptoms and morbid appearances to guide us. We know for a fact that in every case there is intense irritation of the mucous membranes, with increased secretion and extreme prostration; there is coldness of the surface, and diarrhœa. These are all effects it is true; but in the absence of a knowledge of the cause, we can only endeavour to combat the effects.

Obviously, the first thing is to attend to the animal's comfort, to get surface-warmth by any means that may be available, to equalise the temperature of the atmosphere, at the same time that every care is taken to ensure an ample

supply of pure air. Disinfectants should, of course, be liberally employed about the places where the sick animals are confined, and everything likely to contaminate should be immediately removed.

Dietetics come next in importance; the digestive powers are impaired, consequently none but the most easily digestible aliments should be given. No amount of nutriment will be of the slightest use unless the system can assimilate it.

The medical part of the treatment will necessarily call for judgment on the part of the practitioner. Laxatives, particularly saline agents are likely to be beneficial in the early stages of the disease. Diuretics and diaphoretics with calmants may be expected to produce good effects; it is necessary to allay irritation, to remove accumulations from the digestive canal, to promote excretion from the skin, and to supply the system with a certain amount of nutriment in a form that will be most readily digested.

Associated with these measures, which, in the main, come under the head of "elimination," the employments of tonics or stimulants is to be advised, according to the amount of prostration present. Aromatic spirit of ammonia, sulphuric ether, mineral acid, tincture of gentian, and cinchona may in turn be prescribed in preference to alcohol. Whatever stimulants are exhibited it is of importance that small doses should be given at frequent intervals, and that during their exhibition the patient should be incessantly watched. Unremitting attention must be paid to the animal's comfort in the manner suggested, as no medicinal agents are likely to avail in the face of defective sanitary regulations.

The outline of treatment just sketched presents no novelty, it is merely a common-sense plan of procedure, under the circumstances with which we are familiar, and yet how utterly impossible it would be to get such directions absolutely carried out in every particular; and in the absence of such measures as are calculated to preserve surface-warmth and contribute to the animal's repose, how absurd the attempt to cure such a malady as the cattle plague. In the face of every discomfort, exposure to cold, bad ventilation, and worse drainage, surely no system of treatment is worth trial, and the veterinary surgeon who values his credit will abandon the idea of curing until he can at least place his patients under ordinarily favorable circumstances.

THE CATTLE PLAGUE.

Communicated by G. Fleming, V.S., 3rd Hussars.

Having occasion to insert a letter in the *Standard* newspaper in relation to the present Cattle Plague, I have had sent to me the enclosed notes from an officer of high rank in the Austrian cavalry, who seems not only to be well acquainted with the countries supposed to be the birth-place of this pest, but to have made himself familiar with much of its history and etiology. Though we may not be ready to subscribe to all he advances, yet from the interesting way in which he ventures to suggest reflections, and from the pleasure we have had in perusing the elaborate memoir of M. Renault in the columns of the *Standard,* I think this gentleman's testimony may be worth something. I also enclose a copy of a letter I wrote to him in reply. Need I say how anxiously army veterinary surgeons watch the course of events from day to day, and give their best wishes to their professional brethren in civil life? Nothing can pain them more than to note the ignorance and presumption of the public press, which usually never misses an opportunity of maligning the veterinary profession.

Confident in the justness of the views held with regard to the nature and treatment of this most formidable of all maladies, time will controvert the baseless and ridiculous doctrines indulged in by the unscrupulous sensation-mongers.

Yours very truly.

To the Editors of the 'Veterinarian.'

9, Spencer Square, Ramsgate;
Oct. 7th, 1865.

Dear Sir.—You will excuse my addressing you on the subject of the Cattle Plague from having seen your name in a letter in the *Standard, apropos* of M. Renault's very interesting memoir.

I am a Major of Austrian Hussars, and having been a good deal in Hungary, Poland, and the lower Danubian countries, have been in the way of seeing and hearing much of this disease. I cannot altogether concur with M. Renault's hypothesis; but, instead of entering into a controversy on the subject, I think it will be better to call your attention to one or two remarkable facts, from which you can draw your own

inferences. The first is, that it would be difficult to prove that the animals forming the ranks of the Austrian army at the periods mentioned were from the steppes, or even Hungarian oxen; in fact, in proportion as the population of the West of Europe has become denser we have been going further East for supplies of animal food, but these are not and never have been in any great degree transmitted directly from the breeding countries to the consuming ones; on the contrary, England receives animals from France, which receives others from Germany, which receives others from Upper Austria, which receives others from Hungary, and so on from Wallachia, and finally from Bessarabia and the Russian steppes, but this extension of the system is the growth of very recent times, although it is quite possible, nay probable, that the Austrian armies may have at all times used more or less Hungarian oxen.

Secondly, this disease, although existing in the steppes almost without intermission, varies very much in intensity; some years we hear of it very early, in others not at all. Our medical men have informed me that the prolongation of winter for one or two weeks beyond the usual period is invariably followed by an early and violent outbreak. You will please bear in mind that the cattle are enormously crowded in very filthy pens, sheds, yards, &c., and that the provision of winter forage is sometimes very inadequate.

Thirdly, and this is very important, the countries where the disease has established itself permanently, and those which it invades occasionally, have all one common geographical characteristic, they all lie in the lower region of the main valleys; that is to say *none of them reach, still less exceed, the altitude of* 500 *feet above the level of the sea*. If you have a good orografic map of Europe you will find that the whole of the steppe country, the greater part of Bessarabia, Moldavia, Wallachia, the great plains of Hungary, below the above altitude. Further, the valley of the Dniester, from whence only a small belt of land lying at a higher altitude between Pozemyal and Lemberg divides the lower region of the main valley or basin of the Danube and Black Sea from the lower region of the main valleys of the Oder, the Vistula, the Elbe, and the Baltic. The whole of Prussian and northern Germany round by Holsetin, Freisland, Holland, to Belgium lie in the same region. *It is by this road and through these countries the disease has travelled to us.*

Now let us return to the basin of the Black Sea and the Danube. Look at Transylvania, standing up like a fortress at elevations varying from 2000 to 8000 feet above the level of

the sea. I have never heard of the disease there, although lying between Hungary, Moldavia, and Wallachia. I do not assert that it never has been, but I think not.

Look again at the south of the Danube, to the Balcan and Häemus high country, Bosemia, Lessin, Bulgaria, we have never heard of it there.

Now all of these countries have the same breed as that of the steppes.

From M. Renault's memoir it appears that the steppe cattle lose the disease in the Upper Palatinate and Suabia; this all lies between 500 and 2000 feet above the level of the sea.

Thousands of steppe cattle have been forwarded by rail and even driven through Salzburg and Bavaria within the last few years; the disease has hitherto never crossed the Bavarian frontier in this direction, nor entered Switzerland, Tyrol, or any other of the high-lying countries.

Why it has not appeared in Italy where we had parks of Hungarian and steppe oxen in 1859, and a large part of which, Venetia for instance, lies below the 500 feet level, should be separately inquired into; one reason may be that the great depôts are formed in the high country about Laibach and Gosizin, and other peculiarities of climate.

And this brings me to the climatic peculiarities of the steppe country of Wallachia, Moldavia and the great plains of Hungary. Short severe winters, sudden breaks into summer without the transitionary period of spring known to us, *great disturbances of the electrical state of the atmosphere, evinced by sudden thunder-storms accompanied by a fluctuating barometer. Mr. Glaisher tells us we have had great electrical storms this year in this country.*

Now I must enter a region where the facts are unknown to me personally; my informants, however, were medical men of position; who had occupied themselves with this question. They assert that the disease is *Hunger typhus*, that the morbid appearances in the lungs, stomach, &c., are only the consequence of the nervous system by which these organs are supplied being functionally disarranged. They have informed me that the chief seat of the disease is in the upper part of the spinal marrow and the hinder part of the brains. I have not seen in the descriptions of the *post-mortem* examinations in this country that these organs have been examined.

But these gentlemen connect the seat of the disease with the peculiar electric disturbances of the atmosphere in the early part of summer, when it breaks out usually. This is a

point I cannot be a judge of myself, I mention it merely because it may be of use.

Now, if what my informants assert be correct, it is useless to attempt a cure by applications to the lungs, &c. Can you get at the brain and spinal marrow? can you modify the condition of animal magnetism? This you must be in a better position to judge of than I am.

You will, however, perceive from the above, that climate and geographical position have at least as much to do with this disease as race or breed, and that although no doubt can exist as to its being propagated by contagion, the possibility of its spontaneous origin is evident, irrespective of breed or race.

Glancing at the map beside me I see that the east of France and the whole of Spain and Portugal lie above the 500 feet level, they should not be affected spontaneously. The whole of the east of England up to the Humber and the vallies of the Thames and the Severn lie below the same; here the disease might have a better chance of spontaneity.

ALDERSHOT; *Oct. 9th*, 1865.

MY DEAR SIR.—I am indeed extremely obliged to you for your long and most interesting letter on the Cattle Plague.

The stress you lay on the physical geography of the regions in which this malady seems to be indigenous is certainly worthy of attention. Climate, and the nature and configuration of the country has certainly as much, if not more, to do with the production of the disease as the temperament or race of the cattle inhabiting those low malarious tracts. I cannot, however, from reading the history of the malady for the last century and a half, bring myself to believe that it has originated spontaneously in Britain. Facts are everywhere against such a supposition. It is now more than a hundred years since it disappeared from this country after an invasion said to be due to the importation of foreign stock, and by the route you mentioned in your letter; and we must I think have had some, if not many, severe electrical perturbations within that period. In my recollection we have had hot summers and long droughts succeeding severe winters, and diseases of various kinds may have been caused or aggravated by these physical phenomena, but this so-called typhus never made its appearance. On the contrary, it has sprung from a spot or centre of the smallest dimensions in the city of

London, and it has spread gradually from that centre in every direction, and its course has been in almost every case distinctly traced to contact with diseased or imported cattle. In the neighbourhood of Farnham, for example, it commenced among the cattle depastured in a field adjoining a slaughter-house, the owner of which brought all the beasts he intended to kill from the London markets. From this nucleus of infection the malady has spread day by day, step by step, from farm to farm, until now it is rife in every homestead around us, and there is no saying when or where it may terminate, because, thanks to the advice of the public press and the ignorant, the diseased animals are generally kept to be *cured* by treatment of some sort or other. Now, had the disease arisen from some atmospheric or telluric influence, we would not, I am confident, have this gradual and definite spread of the disorder, but might have looked for its eruption over a wide extent of country spontaneously and without much delay, just as we have occurring in the potato and vine diseases. And, besides, disturbances sufficient to create such an urgent and deadly a malady, if of terrestrial or aerial origin, would, one could imagine, affect the health of other creatures more susceptible—and notably mankind and the horse species; but I have reason to believe that these were never healthier.

The name or designation of this disease is not quite exact as we and the French employ it—if it is to be used in comparing it with the disease (so-named) in the human species. Your medical men have certainly made a distinction; but those of our country—I mean those who minister to the ailments of the human species and who have made themselves particularly conspicuous in the public press—have committed great blunders from drawing their analogies too closely when writing to the papers on the subject, and especially with regard to treatment. It differs, in my opinion, from the typhus of men in several minor pathological features, but chiefly in this, that one attack of the disease procures exemption in the bovine tribe for ever after. We all know that a man may have typhus several times. Another dissimilarity exists, viz., the mode of treatment most successful in the human subject is useless in the typhus of cattle. But perhaps the most marked difference lies in the fact that cattle of all kinds are attacked, no matter however carefully they may be tended, no matter whether they are kept in the cleanest sheds with an abundance of pure fresh air constantly entering, and with a supply of the best food and cleanest water, or even pastured in the open air night and day in healthy situations, there seems to be no limit to the number or kind attacked.

Human typhus, on the contrary, is only generated and reigns endemic where fatigue, bad food, foul air, and over-crowding, is permitted, and seldom indeed spreads beyond the localities where filth, squalor, and destitution are fixed. Pure air, good food and enough of it, and attention to cleanliness, are the remedies which never fail to banish the disease. But it is not so with the cattle plague. The nobleman's model cow-house is no more safe from a visitation of the pest than that of the poorest individual, and the treatment is no more successful in the one than in the other. In its nature it is far more virulent than human typhus, and its contagious properties are a hundredfold more active.

The French veterinarian Dupuy, in his 'Traité sur les Maladies Epizooticines,' noticed the posterior part of the brain, and more especially the whole of the spinal cord, as much altered in this disease, but as yet I am not aware of any careful examinations of these parts having been made in recent times. In the symptoms, however, I have observed there were none which would seem to indicate much change in these structures. There is seldom any loss of consciousness or inability to move, even until the near approach of death, and all the sentimental twaddle which has appeared in the *Times* to this effect is purely imaginary and derived from ignorance. Instead of being a nervous disease all the symptoms would seem to distinguish it as arising from the introduction of some wonderfully potent organic poison into the blood which deteriorates its whole mass. We must remember when imagining that the sudden changes of temperature in the seasons induce its appearance in the countries you have mentioned, in North America and in North China towards Peking, where I spent nearly two years, the transition from winter to summer is as abrupt, if not more so, than in the low regions of the steppe country; while the winter and summer months are characterised by violent extremes of temperature and great electrical disturbances, and yet this plague is unknown there.

So far as we can at present pretend to know, it would appear that the peculiar physical configuration of the extensive tract of country extending through Bessarabia, Moldavia, Wallachia, Hungary, and the great valleys and low plains near the Baltic, Danube, and Black Sea, together with the peculiar temperament of the light-coloured bovine race inhabiting it, the great inattention to hygiene, as well as climatic influences, all predispose to, if they do not originate, the invasion of this peculiar and specific disease, which once begun in the animal body generates an intensely active prin-

ciple that can be transmitted in various ways to healthy animals, and produce the same disease in them.

I have ventured thus far to dwell upon what I believe to be the true character of this dreadful visitation, because you have done me the honour and extreme pleasure of stating your views so lucidly and scientifically; and though the late and much revered M. Renault may have erred slightly in tracing the sources of this pest, yet veterinarians in your own country, in France, and I may say in Great Britain, are wonderfully in accord as to the nature and origin, and as to the hopelessness of remedial measures being of any avail when cattle are once severely attacked by it,

Again thanking you much for your kindness and attention in sending such an interesting letter, which I regret is so hurriedly replied to,

I beg to remain, my dear Sir,

Very truly yours.

BOTANY AS APPLIED TO VETERINARY SCIENCE.

By W. Watson, M.R.C.V.S., Rugby.

(*Continued from* p. 569.)

The next plant we shall proceed to describe is the *White Bryony* (*Bryonia dioica*). Although we have no well-authenticated record of the fatal effects of this plant on animals, it nevertheless possesses very active properties, and is not unfrequently brought under the notice of the veterinary surgeon, from its being purposely mixed with the food of the horse, with a mistaken view of improving the condition of the animal.

There are two plants to which the name *Bryony* has been given—one called the *White Bryony* (*Bryonia dioica*) and the other *Black Bryony* (*Tamus communis*). They both grow plentifully in many parts of the country, and possess somewhat similar properties, but their botanical characters differ materially, being placed under two very distinct classes and orders in the vegetable kingdom; the *white bryony* belonging to the gourd tribe and the *black bryony* to the yam tribe. The *White Bryony* (*Bryonia dioica*) belongs to the class of *Exogens*, to the sub-class *Corolliflorœ*, and to the natural order *Cucurbitacæ*. This order of plants possesses many features of interest, and the following are its chief botanical characters:

"*Cucurbitaceæ* (*the gourd tribe*).—*Flowers* usually unisexual, sometimes hermaphrodite. *Calyx*, five-toothed, sometimes obsolete. *Corolla*, five-parted, scarcely distinguishable from the calyx, very cellular, with strongly marked reticulated veins, sometimes fringed. *Stamens*, five, either distinct or cohering in three parcels; *anthers*, two-celled, very long and sinuous. *Ovary*, inferior, one-celled, with three parietal placentæ; *style*, short; *stigmas*, very thick, velvety, or fringed. *Fruit*, fleshy, more or less succulent (occasionally dry, opening by valves), crowned by the scar of the calyx, one-celled (in some momordicas, three or four-celled), with three parietal placentæ. *Seeds*, flat, ovate, enveloped in an aril, which is either juicy or dry, and membranous; *testa* coriaceous, often thick at the margin; *embryo*, flat, with no albumen; *cotyledons* foliaceous, veined; *radicle*, next the hilum. *Roots*, annual or perennial, fibrous or tuberous *Stem*, succulent, climbing by means of tendrils formed by abortive leaves. *Leaves*, palmated, or with palmated ribs, very succulent, covered with numerous asperities. *Flowers*, white, red, or yellow."—*Lindley*.

The plants belonging to this order are chiefly found in the warmer parts of the world, although several are indigenous in temperate climates. About fifty hardy, and nearly one hundred tender species occur in the gardens and botanical collections of Britain. They are mostly climbing plants, with yellow or green unisexual flowers. Several of the plants belonging to this order are familiarly known as articles of food, amongst these will be found the *melon* (*Cucumis melo*), the *cucumber* (*Cucumis sativus*), the *vegetable marrow* (*Cucurbita melopepo*), and the *pumpkin* (*Cucurbita pepo*). "They contain a watery, sweet, or acidulous, cooling pulp, which is slightly nutritious when taken raw, and in some habits proves laxative." Several other plants possess very active properties, such as the *Bryony* (*Bryony dioica*), the *spirting cucumber* (*Momordica elaterium*), and the *Colocynth* or *bitter cucumber* (*Citrullus colocynthis*). Preparations of the two latter being frequently employed in human medicine.

The following remarks respecting the fruit of this order of plants are taken from a work on 'British Poisonous Plants,' by Messrs. Sowerby and Johnson:—"The fruit of all the *Cucurbitaceæ* contains an active poisonous principle, more abundant in the pulp and in the *placenta* or parts to which the seeds are attached than elsewhere; and which is probably the chief source of the disorder so frequently produced by the cucumber, melon, &c., in certain habits and constitutions. The extract from some exotic species of the tribe, as the

squirting cucumber, *Momordica elaterium* and the colocynth *Cucumis colocynthis*, affords useful medicines; but in regard to the employment of the fruits of many as articles of food, the abundance of mucilage contained in them is the only redeeming feature that separates them from the list of active irritant poisons."

(*To be continued.*)

Facts and Observations.

Purification of Fat by means of Electricity.—Dr. Dullo has applied a current of electricity as a means of purifying the fat of bones, which is important as an article of commerce, but which is generally very impure. His process consists in heating the fat in a copper vessel to 40° C., then adding sulphuric acid diluted with ten times its bulk of water, into which a plate of zinc is immersed and brought into contact with the sides of the copper vessel. The electricity thus produced causes much commotion, and effects the dissipation of the impurities in a gaseous form, or they are retained in the water to be removed when the action ceases.

Cheap Source of Oxygen.—A company has been established in Paris for the obtaining of oxygen, by acting on sulphate of lime at a high temperature with silex, so as to form a silicate of lime, sulphurous acid and oxygen gas being disengaged. The gaseous mixture being subjected to the pressure of three atmospheres, the sulphurous acid is liquefied, and the oxygen is purified by transmission through lime water.

Adjustment of the Eye to Objects.—Dr. Lawson, by a careful examination of the eye of the emu, is convinced that the ciliary muscle has no attachment to the ciliary process or to the lens, but is so placed that its contraction must alter the form of the cornea, and he believes that if such a mode of focussing the eye exists in the emu, it is probably the same in man. He is opposed to the theory, commonly adopted, that the crystalline lens is rendered more convex for near vision, and less so for distant vision.

Dextrine in Horseflesh.—M. Limpricht has found in the flesh of a young horse a considerable amount of dextrine, but was unable to detect the same either in the head

of the ox or the flesh of fish. He has also separated taurine and inosite from an extract prepared from about two hundred pounds of horseflesh.

Brewers' Grains and the Cattle Plague.—If any corroboration is needed as to the alarming statements in reference to the fearful havoc the cattle plague has made among milch stock in London and suburban dairies, the fact of there being an unprecedented glut of grains without sale at the great London breweries amply testifies as to the great clearance the cattle pest has made in the cowsheds. The invariable custom with the large and other brewers is to let by contract for one year, dating from Michaelmas, the grains produced from the brewings, and hitherto considerable competition has prevailed among the cowkeepers to secure contracts, and very frequently sub-contracts are made at high premiums. This autumn, however, a most signal and ominous blank exists, and the great brewers are unable to dispose of the wetted malt on any terms or definite period. Several large brewing firms are giving away grains, and even paying to have them cleared away, and unfortunately very many sheds which stalled up from ten to sixty milch cows each, are now entirely empty, and the consumption of grains, which are the *sine quâ non* of London cowkeeping, is so diminished by the reduction of dairying stock by the pestilence of the contagious cattle disease, that they are hawked about at the London railway goods stations at 6d. per quarter. Country dairy farmers, who now daily transmit by railway large quantities of milk to metropolitan dairymen in their difficulties, are generally adopting them as a "staple commodity." Although this mode of feeding certainly increases the supply of milk, yet it by no means improves its quality, and the anticipated great boon Londoners expected to derive by having "pure country milk" imported into the metropolis will be reversed by the reception of "London-made milk" from the country.

Where Fat and Flesh come from.—They come from the earth and the atmosphere, collected by vegetation. Grass contains flesh; so grain. The animal system puts it on from these. Vegetation then is the medium through which the animal world exists; it can exist in no other way. When grass or grain is eaten, the flesh constituents are retained in the system; so also the fatty substance, that is, the starch and sugar, from which fat is made. Some grains have more flesh than others; so of the qualities that make fat. In a

hundred parts of wheat, according to Piesse, are ten pounds of flesh; in a hundred parts of oatmeal nearly double that amount. Hence oats are better for horses, on account of their flesh-forming principle, rather than fat, as muscle is what a horse wants. For fattening purposes, however, corn and other grains are better. When flesh itself is eaten, the system but appropriates what is already formed, but would as readily take it from vegetables, from flour. The flesh-making principle—or the flesh itself, in its constituents—goes to form cheese in the dairy; the starch, &c., butter. Hence it is that some people assert that cream has little influence in cheese, farther than to enrich it; for cheese and butter are entirely distinct. The same kind of food is equally good for the production of either. This is a point of considerable interest, and is not yet fully explained—indeed, it is yet in its infancy. And a plant in its different stages of growth has a different effect. The fat of the plant is held in reserve for the seed; nothing is wasted in leaves, wood, &c.; the precious seed must have it. Hence, when this takes place, the stalk is comparatively worthless to what it is prior to the change. And the fat cannot be appropriated so well in the seed as when it is diffused through the stalk. Tender herbage, therefore, is the best; and when secured before the direction of the oil takes place, so much the better will be the hay.—*Rural World.*

The Cattle Disease in Norfolk.—On Saturday, Oct. 21st, at the weekly meeting of the committee of the Norfolk Cattle Plague Insurance Association, there were great complaints as to unpunished violations of the orders in council, by which cattle were removed from infected districts; and the inspectors were instructed to be more stringent in bringing forward such cases for prosecution in future.

The Cattle Disease in Essex.—Mr. Wallis, Veterinary Inspector for the Halsted district, has published his mode of treatment, which, according to the testimony of the farmers whose cattle have been under his care, seems to have effected a greater proportion of cures than the treatment with stimulants usually adopted. Assuming the disease to be, in its early stage, of a highly inflammatory nature, Mr. Wallis has resorted to bleeding, and the administration of a small dose of arsenious acid, and ordinary sedative and fever medicine. The particulars of the cases are given in a special report to Professor Simonds, and which is now under the consideration of the Royal Commissioners.

THE VETERINARIAN, NOVEMBER 1, 1865.

Ne quid falsi dicere audeat, ne quid veri non audeat.—Cicero.

THE INTRODUCTORY ADDRESS DELIVERED AT THE ROYAL VETERINARY COLLEGE.

Before a large audience, including many of the older members of the profession, who assembled in the theatre of the College on Monday, October 4, Professor Varnell delivered the introductory address.

Plunging at once "in medias res," the lecturer asserted the importance of veterinary science to the country, alluded to the prominent position taken by its members during the last few months as Government officers; and the absorbing topic, "the Cattle Plague," was introduced as a subject for future inquiry, rather than for present discussion. If some of those present expected a more critical examination of this new disease, more ample allusions to its symptoms and morbid anatomy, or some attempt to elucidate the phenomena which attend its progress, they were disappointed; but, in reality, without just reason. Notwithstanding the opportunities which have been afforded for investigation during the prevalence of the malady, we much doubt if the time has yet arrived for the veterinary profession to pronounce upon the question. Enough has been written by professional and non-professional speculators to satisfy the most inordinate craving, and yet but little light has been thrown upon the pathology and treatment of the disease. To the profession the public will look for a decided expression of opinion upon everything connected with the "plague," and the public has a right to demand that such expression shall be the result of a systematic inquiry. There is enough information scattered among the various members in different parts of the country to justify the formation at once of a committee of observation, whose duty it shall be to collect and systematise what is now lying useless, and to direct and organise further investigation.

We do not make these remarks in ignorance of the fact that an "experimental committee" has been appointed by the medical section of the Royal Commission; nor have we anything to urge against it, save that it is principally composed of surgeons and physicians, who are of necessity, by education and habit, unfitted for the investigation of diseases of cattle. Blaine says, "A good surgeon has travelled *three fourths* of the road towards making a good veterinary surgeon." This may be true; but, as the same writer adds, "*He must diligently travel the remainder.*" Accordingly, the first thing the members of the medical section should do is to study the signs of health in the bovine tribe before they proceed to inquire into their maladies; failing this, they can only act upon the information they may obtain from their veterinary associates. It appears to us that an investigation so conducted cannot be accepted by the public as exhaustive in its results. The veterinary profession has a duty to perform, and it cannot do the work by deputy.

After touching upon the "cattle plague," in passing, the lecturer proceeded to map out the ground over which the student would have to pass in his endeavour to reach the goal. Each section of his work was presented to his view. The sciences of anatomy, physiology, pathology, and chemistry, were in their turns considered, and their relation to the veterinary art elaborately explained. The microscope was alluded to as a valuable aid to the student of anatomy; and we hope the time is not far distant when the instrument will be as familiar to the veterinary student as are his dissecting scalpels; without it the realisation of the nature of minute structure is impossible.

The subject of the association of the trade of shoeing-smith with the profession of veterinary surgeon could hardly escape being noticed in an opening address. Professor Varnell's views upon the matter are tolerably well known; he does not hesitate to express his conviction that the union is "prejudicial to the best interests of the profession;" nor do we hesitate to accord our full assent to his proposition; however advantageous in a pecuniary point of view such a combination may be, it is socially degrading. Whether the

remedy suggested by the lecturer would meet the difficulty, we do not know, but we should hail any attempt at emancipation most cordially. The change, if it ever does occur, however, will not be brought about by violence. Gradually, as the veterinary profession progresses to a higher position, when its privileges are recognised and assured, the severance may be quietly effected, but not before the public mind abandons the idea that the man who makes the horse's shoes must of necessity treat his diseases.

We commend the whole address to the careful consideration of those who are and those who seek to become members of the profession; the tone throughout is healthy; the burden of the song is WORK. Recreation is provided for "a change of employment." We have an opportunity now, that may never be presented again, that never has occurred before since we became a profession. There is a vast demand upon our resources, but by a mighty effort it can be met. Let us neglect the work of the present, and the efforts of another century will not suffice to retrieve the errors of the past.

Translations and Reviews of Continental Veterinary Journals.

By W. ERNES, M.R.C.V.S., London.

MM. TROUSSEAU AND DUMONTPELLIER ON A NEW PROCESS TO DETECT GLUCOSE IN URINE.

Union Médicale.

THIS process consists in the discolouring effect of glucose on the tincture of iodine. When you pour some tincture of iodine into urine which is acid, proved by the test paper, the urine changes to a dark colour in proportion to the quantity of iodine mixed with it. If icteric urine be treated with tincture of iodine, a few drops will suffice to render manifest the green substance called *biliverdine*. To make sure of the value of this process, we frequently tried the tincture of iodine on different kinds of urine, and we have been convinced that it has a special effect on icteric urine. We had carried on these researches for several weeks, when, on the 25th of March,

1863, on examining and comparing several kinds of urine with the tincture of iodine, we poured a few drops into a vessel containing diabetic urine, when it became almost colourless. It first assumed a colour resembling barley-sugar, which was due to the admixture of the iodine; but what was our astonishment when we saw the colour disappear gradually, and the urine become completely colourless in a few seconds. Has the diabetic urine the property of decolourizing tincture of iodine? If so, then tincture of iodine becomes an easy means to discover glucose in the urine. The experiment was repeated several times on the same urine, contained in different tubes, and every time, in a few seconds, the discolouration took place. The experiment was then made with the urine of several patients affected with diabetes, and in every instance the same result followed. Soon we were able to state that the decolourizing effect on the tincture, by urine containing sugar, was in proportion to the density of the urine. Moreover, after having experimented by the same means on different urines fresh and acid to the test paper, we have ascertained that the urine of diabetes alone has the property of rapidly destroying the colour of the tincture of iodine. All these experiments, be it understood, were made cold, that is with urine the maximum temperature of which was from 30 to 37° Cent. The experiments will be continued by us, and possibly it may be that the amount of glucose contained in the urine can be determined by the tincture of iodine.

THE EFEECTS OF ABSTINENCE AND INSUFFICIENT ALIMENTATION ON ANIMALS.

By M. Colin, Professor at the Veterinary School, Alfort.

M. Colin says that there are great variations in the manner of living in the animal subjected to total abstinence. Sometimes it consumes itself but slowly, at others it devours itself with great rapidity. It seems that in one case its internal appetite is weak, while in the other it is voracious. The animal which receives no aliment from without, takes from within an equivalent to it; little, if the deterioration of the blood is but slow and the evacuations are not very active; on the contrary, much, if the blood undergoes speedy alteration and its calorification be over-excited. This must be the case, for as the animal always lives in the same manner, the blood in every instance is reconstituted by materials of the same nature, and the temperature is maintained by the oxi-

dation of the same combustible substances. These materials and combustibles come either from without or from within; this is the only difference. From this uniformity in the phenomena of nutrition we may deduce the logical consequence that the internal ration, borrowed from the animal's own substance, must be analogous if not identical to the one taken in in the ordinary way from without. This is, in fact, that which happens. What is there in the alimentary substances capable of maintaining life? There is a plastic aliment to reconstitute the blood, and a respiratory aliment for the calorification. These two are always united in the hay, the grain, and in flesh meat; but they exist then in variable proportions. In vegetable substances, the plastic aliment constituted of nitrogenous substances, such as gluten, caseine, leguminine, is only in small quantities; but it is the reverse in the respiratory aliment, or non-nitrogenized, that is sugar, gum, and fecula, which are in great abundance. On the contrary, in the animal substances, and notably in the muscular fibre, the plastic aliment predominates in the form of albumine and fibrine, while the respiratory aliment is only represented in the shape of a small quantity of fat.

(*To be continued.*)

ROYAL COLLEGE OF VETERINARY SURGEONS.

QUARTERLY MEETING OF COUNCIL, HELD OCTOBER 4TH, 1865.

PRESENT:—The President, Professors Gamgee and Brown, Messrs. J. C. Broad, Dickens, Ernes, Field, Greaves, Harpley, Harrison, Hunt, Hunting, Lawson, Moon, Pritchard, Secker, Thacker, Withers, and the Secretary.

The President in the Chair.

The minutes of the preceding meeting were read and confirmed.

A letter was read from Mr. J. C. Broad, of Paddington, acknowledging his election as a member of the Council.

The Secretary informed the Council that a meeting of inspectors appointed by the Government, within the metropolitan district, for the suppression of the cattle plague, had been held on August 21st, at the Royal College of Veterinary Surgeons, at the request of Professor Simonds, and under the sanction of the President, for the purpose of discussing cer-

tain important points relative to the duties of veterinary inspeetors and the arrangement of their districts. There were present—The President, Professors Simonds and Brown, Dr. Williams, Messrs. Broad, Boughton, Boulter, Cheeseman, Cowie, Cross, Dale, Drake, Farrow, Hancoek, Helmore, Lowe, Moon, Moss, Priestman, Skelton, Stanley, Tegg, Woodger, and the Seeretary.

The President informed the Council that he had ordered 1000 copies of the eounty list of members of the body corporate to be printed and circulated amongst the magistrates of the United Kingdom.

A letter was then read from Dr. Struthers, relative to the rejected candidates at the recent examinations, who hold the Highland and Agricultural Society's certifieate. Dr. Struthers stated "that he was unable to answer the inquiry."

The work, 'Oliphant's Law on Horses,' as ordered by the Counеil, was laid on the table; also two works, entitled 'Aquapendente Opera' and 'Snape's Anatomy of the Horse,' whieh were presented by the President, Professor Varnell, to the Library of the College.

It was moved by *Professor Gamgee,* and seconded by *Mr. Ernes*—

"That the thanks of the meeting be awarded to the President for his valuable contributions."—Carried unanimously.

A letter was read which had been received from Mr. George Scott, of Kentish Town, now holding the Highland and Agrieultural Soeiety's certificate, who was desirous of becoming a candidate for the diploma of the Royal College of Veterinary Surgeons at the next meeting of the Court of Examiners.

It was moved by *Mr. Lawson,* and seconded by *Mr. Hunt*—

"That Mr. Scott be informed that he will be required to conform with 'Bye-law No. 27,' and that the examination of pupils for the diploma will take place in the week before Christmas."—Carried.

The Registrar reported the following deaths—viz., Mr. Anthony Morpeth, of Bampton, Oxfordshire, his diploma dated May 26th, 1830; Mr. Thomas Hiekman, of Alberbury, Salop, diploma dated May 11th, 1853; Mr. Samuel Fisher, of Stamford, diploma dated April 22nd, 1842; Mr. John Betts, of Doeking, Norfolk, diploma dated May 26th, 1852; Mr. Philip Gadd, of Birmingham, diploma dated April 29th, 1859; Mr. Walter C. Coley, late of Holloway,

diploma dated April 30th, 1847; and Mr. Robert Bowles, of Abergavenny, diploma dated June 15th, 1835.

The report from the Finance Committee, and the quarterly balance-sheet of the Treasurer's account were submitted. The current expenses for the quarter amounted to £56 9*s.* 10*d.*, which they recommend should be discharged. This would leave a balance in hand of £618 16*s.* 5*d.* The vouchers and receipts of payment during the preceding quarter were examined and found correct.

The report was received and adopted.

Cheques were ordered to be drawn for the current expenses.

It was moved by *Mr. Harpley*, and seconded by *Mr. Thacker*—

"That the Treasurer be authorised to place the sum of £100 to the deposit account."—Carried.

The Treasurer was authorised to issue a cheque for the Examiners' fees, and also a cheque for the fire insurance, due at Christmas.

A letter was read from Mr. W. Heaps, M.R.C.V.S., Preston, stating "that he had received communications from two members of that borough, who were willing to support any measure brought before Parliament for the benefit of the profession."

Several of the Council expressed their conviction that other members of Parliament would be found to come forward and support the bill.

It was moved by *Professor Gamgee*, and seconded by *Mr. Ernes*—

"That steps be taken to prepare the bill, in order that it may be laid before Parliament with as little delay as possible."—Carried.

Mr. Hunting drew the attention of the Council to some suggestions which the President had made in reference to the periodical delivery of lectures at the Royal College of Veterinary Surgeons, under the sanction of the Council, in accordance with the system adopted by the Royal College of Surgeons.

Professor Gamgee gave notice of the following motion, to be considered at the next meeting:—"That this Council cordially approve of Professor Varnell's suggestion to inaugurate a system of lectures, to be delivered periodically in the Royal College of Veterinary Surgeons."

By order of the Council.

William Henry Coates,
Secretary.

YORKSHIRE VETERINAY MEDICAL SOCIETY.

The usual quarterly meeting of the above society was held at the White Swan Hotel, Halifax, on Tuesday, Oct. 10th inst.

The chair was taken at 2 p.m. by the President, Mr. Dray. There were also present Messrs. Greaves, Manchester; Patterson, Dewsbury; Freeman, Sen., and Freeman, Jun., Hull; Cuthbert, Leeds; Broughton, Leeds; Howell, Rochdale; Smith, Darton; McTaggart, Halifax; Lord, Halifax; Anderton, Skipton; Schofield, Pontefract; Berry, Northampton; Carter, Bradford; Elam, Brighouse; Naylor, Wakefield; Falding, Wakefield; Smith, Barnsley; and the Secretary.

After the preliminary business was disposed of, the President delivered the following address:

In making a few remarks on "Cattle Plague" I trust I shall not be thought presumptuous, having no new ideas nor any information to communicate; but as this is the last opportunity I shall have as your President to address you, I have thought it my duty to again introduce the subject which is engrossing the most serious and anxious attention of the members of our profession. The "Cattle Plague," notwithstanding the opportunities we have had of witnessing its varied forms, is still, so far as its most essential characteristics are concerned, a subject of controversy. Is there anything singular in this? The means of becoming acquainted with the pestilences that affect the human race, from time to time, seem to be much greater than those afforded us in the case of the brute creation, and yet various important questions connected with them remain in dispute to the present day.

Upon the very old question of contagion and infection the most eminent authorities differ in opinion, and the numerous remedies which are sure to be advocated on any threatened approach of a malignant epidemic, plainly denote that prophylactics are in some degree only experimental. There are, however, always certain individuals, when any direful malady is raging, ready to rush into print with sure methods of cure; their suggestions can be of little value, and can only be looked upon as empirical. The apparent success of a remedy is probably often due in fact to a natural turn in the course of the disease. We not unfrequently hear that people had been dying in large numbers when the new cure was suddenly tried, and the mortality suddenly abated. The remedy then obtained credit for what was probably the result of the natural termination of the crisis. The virulence of the pestilence was spent, and the season of recovery was begun. If such then is the case among men, who can discern and describe the symptoms which affect them, the uncertainty and doubt is greater in the case of animals who have no means of demonstrating what they feel. Our art is exercised under greater difficulties than is that of the physician and surgeon, and

hence the perplexity often felt in endeavours to form a correct diagnosis, and prescribe a remedy for the disease.

I think now the majority of our profession are unanimous in opinion that "Cattle Plague" is an exotic, and is most contagious in its nature; but it is admitted that its intensity is diminished by circumstances within control. Fresh air, pure water, and cleanliness, will as surely increase the chances of escape as foul atmosphere and dirt will augment the malignity of the disease.

Although the origin and diffusion of the pestilence may be a subject of dispute, its actual existence is marked by unmistakable symptoms, both antecedent and subsequent to death; but all reports on this fearful malady agree that frequently there is an absence of some of the indications which generally denote the disease.* To complain that remedies fail is merely to say that the violence of the disease, as in the case of all those which are termed plagues, is due to some noxious influence which baffles the physician's skill. The cause no doubt is to be found in a vitiated state of the atmosphere; the distemper may be contagious, but so long as this occult influence continues active it will be impossible to prevent fresh outbreaks of the pestilence in the most guarded and strictly secluded places. But if its influence is due to some morbific influence in the air, we may hope that it will be comparatively speaking of short duration. If this theory is correct we may suppose the noxious element loses some portion of its force for every victim attacked, and in the end becomes exhausted.

It is impossible to decide these mysterious questions, but that is no reason why every precautionary measure should not be adopted, such as stopping fairs and markets, but I am decidedly opposed to indiscriminate slaughter. The Mayor of Leeds at my request was willing that a Sanitarium should be erected, but he was overruled by some of the members of the Town Council, and the proposition abandoned.

The fact that every animal attacked with the disease does not die, should be an inducement to give the poor brutes a chance of recovery. To consider the plague incurable is to add to its fatality. Cattle Insurance Companies may do much good; but to put an end to every infected beast without trying some curative treatment is to confess that the malady is unconquerable, and entirely shuts out the probability of a remedy. I am quite aware of having the highest authorities against me in suggesting Sanitariums, but I think the profession and the public would be better satisfied if the trial were allowed, if only to prove whether medicinal agents are of any avail.

In conclusion, I beg to tender you my best thanks for the patient hearing you have accorded me, and I sincerely hope when we meet again at our Annual Meeting in January, 1866, that we may be able to congratulate each other, not only in an abatement, but in a total eradication of the disease termed "Cattle Plague."

* Vide Extracts from Medical Men and Veterinary Professors.

Mr. McTaggart was now called upon by the President to give his Essay on the "Comparative Merits of Allopathy and Homœopathy."

Mr. President, Vice-President, and Gentlemen.—The subject which I now bring before you for discussion is the Comparative Merits of Allopathy and Homœopathy. In taking a retrospective view of the history of the practice of medicine from the time of Esculapius down to the present period, passing in array many noble names of men who, with anxious minds, have endeavoured to make life sweet to those who unfortunately had fallen from a healthy condition into a state of disease and suffering—it is natural to suppose that great difficulties must have obstructed the efforts of medical men in their investigations into the nature and properties of the vegetable and mineral worlds from which they had to collect their medicinal agents for intended good. And great joy must have been felt on stumbling accidentally on virtues in either, which would afford relief to the disarranged organism. But strange to say, notwithstanding the innumerable members of the allopathic school of medicine who have ransacked with chemical acumen the vegetable and mineral worlds for agents to be applied in the healing art allopathy has yet no fixed law or principle. All is speculation—all uncertainty.

Aloes, for instance, is known to act as a purgative, but that is all, and its action as a purgative is liable to do as much harm as good. It is the speculative mode of draining the system of its fluids—it is the creation of a disease of the mucous membrane of the bowels; and if the constitution of the animal should be, at the time of its administration, in a weak condition, it may cause fatal prostration, or at least greatly retard restoration. The repeated administration of aloes, as a purgative, even in strong, healthy animals, must eventually conduce to weakness, and render them more liable to diarrhœa, dysentery, colic, and inflammation of the bowels. It is perfectly evident, then, that aloes, as generally administered, according to the allopathic rule, is altogether uncertain and unsatisfactory in its results. Nitrate of potash, as a further illustration, is given as a diuretic, and its repeated administration is known to be most destructive to the healthy function of the kidneys—it is another mode of draining the system of its vitality. Calomel is another prominent medicine,—its action is upon the liver and bowels. It produces salivation. It is considered a specific in certain diseases. It is given in quantities capable of softening the hardest material in the body; and it has struck the death blow on many fine fellows of our race. No defined medical law regulates its administration. Antimony is another medicine of note as a sudorific and emetic.

These medicines are given on the principle of producing one disease in order to remove another, as the term Allopathy implies—*allo*, another, and *pathy*, a disease. As, for instance, in diarrhœa astringents are administered to induce costiveness, viz., an opposite disease. In cases of costiveness, aloes, &c., are administered, to

bring on diarrhœa. It is unnecessary to enumerate more instances, as the object in view is to show that in the administration of medicines in the manner of the allopathic school, there is no certainty as to the curative results. As John Hunter ably expresses himself on this subject—"It is setting up an artificial disease in healthy organs, in the hope of giving a different direction to the concrete development of the morbific force, and of transferring it from one organ to another."

When such an authority, in the allopathic school, as Boerhaave, has expressed himself dissatisfied with the uncertainty of the action of medicines recommended by the then faculty of medicine, on the various diseases incident to the human constitution, we may well open our eyes when we see a glimpse of medical light that is likely to pierce the thick atmosphere which hovers around the old school of medicine. Boerhaave says that "if we compare the good which half-a-dozen true disciples of Esculapius have done since their art began, with the evil which the immense number of doctors have inflicted upon mankind, we must be satisfied that it would have been infinitely better for mankind if medical men had never existed."

"I know right well," said an old physician, "that seven tenths of the patients die, not of their diseases, but of the improper or excessive qualities of medicines given to them."

A lady once said to the celebrated Petit—"So skilful an anatomist as you are, ought certainly to cure all diseases." Petit frankly replied—"You mistake, madam, it is with physicians as with hackney-coachmen, who know all the streets without knowing anything of what is going on within the houses."

"Unfortunately," says Sœrg, "we have, as yet, but too few certain ideas regarding the real powers of medicines, and the modification they effect in the human body. That which we are chiefly deficient of, in almost every instance, is the power of distinguishing the primary from the consecutive effects, the principal effects from those which are accessory and accidental. It is precisely from this, it follows, that we are unable, in any disease, to calculate the effects of such or such a substance, to prevent it from acting too much or too little, to obviate the useless consecutive or accessory phenomena which it may produce. Now, every one sees that this inability stamps our practice with the seal of imperfection."

Allopathy, in the present day, bears some analogy to the old coaching mode of travelling in the comparison with the now fleet railway system of homœopathy. We will now enter a first-class carriage in the homœopathic railway. Hahnemann, a medical practitioner, a Saxon by birth, was the first who brought homœopathy into notice. He was dissatisfied with the action of medicines, having no certain rule to guide him to satisfactory results, his feelings sorely tried by seeing his own children linger in painful disease, every effort on his part to sooth their illness only making bad worse. He, for a time, abandoned the profession in disgust, and for a number of years gave his time to chemical and literary

pursuits. In translating Cullen's 'Materia Medica,' he noticed the peculiar action of cinchona bark in cases of intermittent fever, impressed by some peculiar fancy he determined on dosing himself with it for several days. The consequence was, it induced symptoms analogous to intermittent fever. And, as Newton, on seeing an apple fall from a tree, obtained the clue to the principle of gravitation, so the circumstance of the cinchona bark producing symptoms similar to ague, or intermittent fever, when in a state of health—a medicine which he had been in the habit of prescribing for this said disease—struck a cord which reverberated to his cerebral centre, and invoked the action of the faculty of causality; the consequence was a new philosophy of medicine, and as a skilful accoucheur he brought a noble bantling into the medical world, which he denominated homœopathy, and on a wreathe encircling its brow he engraved the significant Latin maxim—"Similia similibus curantur" (like cures like). From that time he pursued a noble career in testing a number of other medicines upon himself and others in a state of health, and a 'Homœopathic Materia Medica' (by him and others) is the consequence.

"Homœopathy" (says the celebrated Dr. John William Hayward, of London) "as is implied in its name from *homaion*, similar, *pathy*, disease, is that system of medicine which cures disease by those means which will (in a previously healthy person) produce a similar disease; which cures, for instance, vomiting by means which will produce vomiting, constipation by means which will produce constipation, diarrhœa by means which will produce diarrhœa, inflammation by means which will produce inflammation, debility, by means which will produce debility, and so on; also disease of any particular organ or part of the body by means which will produce disease of that particular organ or part—disease of the brain, for instance, by means which will produce disease of the brain, disease of the lungs by means which will produce disease of the lungs, disease of the bowels by means which will produce disease of the bowels, and so on; and again, each kind of disease by means which will produce that particular kind—sthenic inflammation, for instance, by means which will produce sthenic inflammation, asthenic inflammation by means which will produce asthenic inflammation, bilious vomiting by means which will produce bilious vomiting, vomiting with diarrhœa by means which will produce vomiting by diarrhœa, diarrhœa with colic by means which will produce diarrhœa with colic, diarrhœa with bloody stools by means which will produce diarrhœa with bloody stools, and so on; studying closely the similarity of the effects of the disease-cause to those of the medicine when it acts as a poison or disease-cause—the correspondence between the disease produced by the disease-cause (and then existing in the patient) and that producible by the medicine (and previously in the physician's possession). Now, it is well known that ipecacuanha and tartar-emetic when given in the usual allopathic doses, frequently repeated, will produce vomiting; opium, nux vomica, and iron, constipation; aloes, colocynth,

and rhubarb, diarrhœa; aconite, general inflammative fever; belladonna, fever similar to scarlet fever; mercury, sore throat, and so on; also that belladonna, stramonium, and opium operate on the brain; tartar-emetic and phosphorus on the lungs; ipecacuanha and arsenic on the stomach; aloes and rhubarb on the bowels, and so on; and again, croton oil and veratrum produce diarrhœa with *vomiting;* colocynth and senna, *diarrhœa* with *colic;* corrosive sublimate, diarrhœa with *bloody stools,* and so on. Hence, simple vomiting is treated with ipecacuanha or tartar-emetic; constipation with opium, nux vomica, or iron; diarrhœa with colocynth, aloes, or rhubarb; inflammatory fever with aconite; scarlet fever with belladonna; sore throat with mercury, and so on; also disease of the brain with belladonna, stramonium, or opium; disease of the lungs with tartar-emetic or phosphorus; disease of the stomach with ipecacuanha or arsenic; disease of the bowels with aloes or rhubarb, and so on; and again, diarrhœa with vomiting, with veratrum or croton oil; diarrhœa with colic with colocynth or senna; diarrhœa with bloody stools with corrosive sublimate, and so on; always selecting the substance whose poisonous effects correspond most closely with the disease present."

Unless the disease to be cured is very similar to that producible by poisonous doses of the medicine, it will not be cured by that medicine, for no medicine has power to cure a disease unless it operates on the same structures, and that in a manner very closely resembling the manner in which the disease-cause has operated; but *every medicine will cure the disease that is similar to the one it will produce* when given in poisonous doses to a healthy person.

From these remarks it will be concluded, and that rightly, that whoever cures delirium tremens with opium, morphia, hyoscyamus, or digitalis; disease of the urinary apparatus with cubebs, copaiva, juniper, or turpentine; syphilis with mercury; vomiting with an emetic; diarrhœa with a purgative, gray powder, or rhubarb; or intermittent fever with quinine or arsenic; cures these diseases homœopathically, and that whether he gives a grain, a drachm, an ounce, or only the millionth part of a grain for a dose, the dose makes no difference—homœopathy is homœopathy irrespective of the dose. It is, however, not homœopathy to treat a tipsy man with whisky, for alcohol will not cure the effects of alcohol; nor to give a man who has been purged by rhubarb another dose of rhubarb—this is not *homœo*pathy but *iso*pathy; neither is it homœopathy to give opium to overcome diarrhœa, or aloes to overcome constipation—this is allopathy, and that even were the dose given but the millionth or billionth of a grain. The *dose* has nothing to do with the *principle* of either system; the system is the system and the dose the dose.

In homœopathy it is the object of the practitioner to operate on no other part than that diseased, and to operate on that in a direct and specific manner closely resembling the manner in which the cause of the disease has operated; when therefore he meets with a case of disease of the brains, he does not operate on the bowels with

purgatives; on the liver, mouth, and bones, with mercury; or on the skin with blisters; but directly and specifically on the brain itself by means of substances that have been proved to operate directly on that organ in that particular manner. So also in disease of the chest, windpipe, and stomach, he lets alone the bowels, liver, and skin, and operate directly on the part diseased; and so also in all other diseases, he acts only on the part diseased, and therefore cannot produce disease in any other part, nor can he merely *remove* the disease to another part. When the disease disappears under such treatment it is absolutely *cured*, for the treatment was not, as it is in indefinite allopathy, against the health to destroy it, but against the disease to cure it; not to a healthy part to make it diseased, but to the diseased part to make it healthy; not, as it is in indefinite allopathy, directed against the disease to displace it by the opposite disease, nor to the diseased part to cause in it the opposite disease. Homœopathic treatment, therefore, never interferes in the least degree with Nature's efforts at cure, much less prevents them, and still less does it ever kill a patient. Homœopathy is, therefore, not a disease-producing art, but in every sense of the term a disease-curing science, and would very properly be called idomœpathy-disease-curing system, from *idomai*, I cure, and *pathy*, disease. It is the only true because the only natural system of curative medicine—a system of medicine which from its consistency, simplicity, and truth, attracts at once the confidence of the public and commands the respect of the scientific world. The dose is a matter of *simple experience* in both systems. "What cared Hahnemann," says Marcey, "what care his disciples whether they use *one* or *twenty* drops of a crude tincture, or one drop of a twentieth attenuation. Were twenty drops of a crude tincture or twenty grains of a crude substance more efficient in curing sickness than one drop or one grain of an attenuation, is there any man who supposes that Hahnemann or his followers would not have administered them in this form in preference to any other? Homœopathy, as now accepted, has determined the point, that the physician must exercise his judgment as to the dose, varying it from the *highest dilution* down to one or more drops of the undiluted tincture, as individual cases may demand."

We have now arrived at the allopathic and homœopathic junction station, so we will enter the refreshment room and vivify the inward man.

It is gratifying to notice the respectful tone of our veterinary periodical, the *Veterinarian*, in reference to homœopathy—it stands in great contrast with the periodicals of our sister profession —the vituperative spirit evinced by many of the old school is, to say the least, strongly indicative of a large endowment of self-esteem and destructiveness with small benevolence, which combination produces intolerance. It may be necessary to observe for the moral edification of the old school that all the homœopathists in this country are allopathists, but all allopathists are not homœopathists, consequently the homœopathist has the advantage of knowing as much as the

allopathist with the addition of the knowledge of the medical system of the renowned Hahnemann.

The homœopathist has studied the various branches of the medical school with the allopathist—at the same college and under the same professors he has learned anatomy, chemistry, botany, physiology, and pathology—by the attainment of a diploma he has proved his ability in the various departments of his profession, and receives authority to exercise his talents as best he can; the licentiate is not interdicted as to the amount of a dose of medicine he may prescribe —at college he is taught the limit within which a dose may be given not to be absolutely poisonous, but he is left at liberty to exercise his discretion according to the nature of the case and constitution of his patient as to the amount he may deem necessary.

Where the allopath gets indoctrinated into the mysteries of homœopathy he is above his common allopathic self, he is then two in one. As a homœopath as well as an allopath he in time discerns the superiority of his position and regrets with pity, when occasion requires that he may be called to consult with an allopath, that the said allopath should not have burst the aurelia or chrysalis covering of the old Materia Medica of unsubstantiated hypotheses—the homœopath feels like the new-fledged butterfly in a new atmosphere, luxuriating in a sunny, free, generous, and joyful existence—the homœopath now feels the benefit of his extra attainments and is in a position to tell his allopathic friend "that medical men are not tied down to the opinions of Hippocrates, of Galen, &c., but have all nature and all men's observations before them without any obligation to subscribe implicitly to any one."

In olden times, when physic was represented by the barber and the blacksmith, inflammation, then as now, was the bugbear—this *ignis fatuus*—this "will o'the wisp"—this imaginary evil inflammatory spirit, like a roaring lion seeking whom he may devour, this was the enemy they had to contend with, and many a lance was broken in the tilt. If the enemy assumed a florid tint the lance or the fleam were at work; if the enemy located itself in the leg or foot an opening was made in some of the sanguineous channels in the toe, and the inflammatory rogue directed to make his exit; having no such intention, he leaves the toe and quarters himself in the shoulder; a puncture is made in the arm, and he lets the life-blood flow, and thinking it rather dangerous to remain longer in the extremities betakes himself to safer ground and makes the lungs his resting place—here again his camp is stormed. No rest for the wicked. He is now attacked with blisters, more bleeding, and physic, to a nauseous degree. He now finds he has not bettered by the change, so, with sword in hand, and being somewhat displeased at the conduct manifested towards him, makes a direct attack upon the heart, and a furious encounter takes place, both are *sairly fourfouchten*. The heart gives in and poor lactonious inflammation, sorely conscience-stricken, lays him down and dies. In the present age of inventions it is not incumbent upon us to follow the old routine in medical science, as if

we were eternally to run on one groove. I therefore respectfully beg to take an objection to the term inflammation, as not suited to the present scientific age. It has been the guilty agent of more mortality than all the plagues of Egypt or anywhere else, the whole superstructure of noble medical science being based upon this untoward term. "Old opinions, rags and tatters, get you gone—get you gone." I would substitute for the term inflammation, neuro-electrical disturbance. Inflammation, from *inflammo* to burn, is characterised by redness, heat, and pain. On the surface of the body this heat may be evident, but in internal organs which are not exposed to a colder atmosphere, the temperature must be equal, and if more blood than ordinary be accumulated in the lungs, liver, kidneys, &c., there cannot be more heat than usual, consequently the term inflammation seems to be misapplied. In the science of electricity the terms positive and negative are employed to denote the electrical condition of bodies; those in an opposite electrical condition, when brought within striking distance of each other, are restored to a state of equilibrium, in consequence of the positive yielding its plus to the minus of the electro-negative. A cloud, for example, discharges its positive electricity into bodies in a negative condition, such as the earth, trees, water, &c., hence we have lightning and thunder—clouds in opposite conditions of electricity do the same thing. A galvanic battery composed of copper and zinc plates, requires a fluid as a conducting medium, such as acid and water, and the power of the electrical or galvanic action will be in accordance with the strength of the acidified solution. "In experiments made with the great battery of the Royal Institution, it has been found that 120 plates, rendered active by a mixture of one part of nitric acid and three of water, produces effects equal to 480 plates rendered active by one part of nitric acid and fifteen of water." The force or power, then, of the electricity will depend upon the materials being properly applied—a certain quantity will only last a certain time, and if not renewed the electrical action becomes weaker until action terminates in mechanical death. Now, in looking at the nervous constitution of animals in the light of a living galvanic apparatus, it will throw more light upon the various diseases or disturbances in the animal economy than can possibly be conveyed by the term inflammation, and may lead to a more consistent dietary for the production of animal electricity and a more suitable treatment under disease or electrical disturbance. If the nervous power becomes weak from over exhaustion or other debilitating influences—in order to its restoration, substances must be administered that will conduce to the elaboration of positive nervo-electrical power, hence wine or spirits which contain almost all the elements of the blood conduce to this end, as well as many other materials of a positive-producing power; but, on the other hand, if we have disease arising from an overplus of animal electricity which we designate as postive, then we require the administration of substances of a negative kind, or which being assimilated into the system through the organs of digestion, neutralize the extra or

positive, and equalises the electrical condition into what we may term natural health. Our medicines which we use for the restoration of the system from disease are of two kinds, being those which contribute positive electrical action, and those which produce a negative condition. Aliments, as well as medicines, have their own individual powers of producing changes in the system—they have their own electro-galvanic producing power—and hence the variety of aches and pains. In gout, for instance, where there is a neuro-electro-galvanic disturbance, and where the foot is surcharged with electricity, a medicine of a negative-producing power requires to be administered; and as an adjunct applications of a negative nature, such as water or other porous substances, applied to the foot, a friend of mine who was honoured with an acute attack of gout, and had a treatment of this kind, experienced a shock in the toe as if he had received the contents of a small Leyden jar—from that moment he was convalescent. In congestion of the lungs where there is an accumulation of blood and a tendency to a coagulation, in consequence of a want of some material necessary to keep up the neuro-galvanic action, ammonia, &c., is given, it is absorbed into the liquid vital stream giving impetus to the neuro-galvanic battery, which now plays its part with renewed energy, and the liquefaction of the coagulum is the consequence, and a perfect equilibrium of respiration and circulation restored. In most cases of fever the treatment now, by the most advanced allopathic medical men, is to give wine or spirits. Those electricity-producing agents give life and veracity to every organ in the body; and while they enforce the vitality of the system the necessary medicines can, at the same time, be administered for the subjugation of whatever aberration there may be in the organism. Bodies similarly electrified repel each other, but when dissimilarly electrified they attract each other."

Faraday, the great chemist and electrician, says "he has extracted eight hundred jars of electricity from one drop of water." Considering that every drop of blood is pregnant with electricity, we can easily conceive the amount lost to the system from bleeding direct from a vein, and indirectly from purgative action or from diuretics. When the system is strong should a neuro-electrical disturbance be manifested, a slight drain from the system may tend to a partial equilibrium; but the persistence in such treatment, by draining the body of its life-supporting power, must tend to a disorganisation. Where the constitution of an individual is in a debilitated condition to begin with, the extraction of the fluids of the body in any shape must be greatly injurious, if not fatal, in consequence of the loss of animal electricity, so necessary to organic action.

On the allopathic principle we find that sulphate of iron, citrate of iron, sulphuric acid, nitric acid, &c., are administered as tonics. Now, these substances are electro-galvanic-producing agents, and it would appear that it is the consequence of these substances being introduced into the circulation, and becoming the agents of electrical action, to the nervous system, that benefit is derived; but their

tonic-producing properties have not hitherto been properly understood, although the evil effects of over doses have been painfully manifested. In electro-galvanic instruments electrical fluid may be developed to such an extent as to melt or destroy the conducting wires, and I apprehend it may have a similar tendency if in over abundance in the animal system of injuring the nerves, and consequently doing great injury to the bodily organism.

In Dietl's well-known experiments he found that whereas 20·4 per cent. of cases of pneumonia treated by blood-letting and 20·7 per cent. of those treated by tartar emetic died—both remedies, be it observed, eminently depressing to the vital powers—only 7·4 per cent. of those who had no medicinal treatment whatever succumbed to the disease. These cases occurred in Vienna, where no change of type has been noticed in acute inflammations. Dietl further remarks "That venesection favours the spreading of hepatization and favours it all the surer the oftener it is repeated and the poorer the patient is in blood; so that many cases of pneumonia, both intense and extensive, were first pushed to their height by venesection—progressed and throve under the lancet." Innumerable instances might be adduced to show the baneful effect of acting upon the term inflammation. When we look at the construction of the nervous system in man and other animals we see a great similarity to that of a galvanic battery with telegraph wires—the brain and the spinal marrow being the battery, and the nerves the conducting wires to the muscles of the body and extremities, and by the sympathetic nerve with the solar plexus or the organic system and nerves.

I enter upon this part of the subject in order more particularly to show that upon the homœopathic principle the various faculties and feelings of the brain and functions of the mind can be acted upon singly or individually by medicines; and that upon the homœopathic law affections of the mind can be reached in a curative form as well as any disease affecting the body—this it may be said applies to man more than the lower animals, but I ever dissent from this opinion inasmuch as the animals we have to do with professionally, are of a similar construction; experiments on the nervous system of man and the lower animals prove them to be of the same nature, similar in all their functions, similar in their origin and distribution, nerves of motion and sensation united in the same way, the respiratory and sympathetic have the same origin and office in the dog or any other animal as in man: the mental faculties and feelings are acted upon in the same manner and by the same agencies in the horse. The distribution of nerves from the cerebral mass or nervous centre is similar to that in man; the conformation and division of the brain into its various departments are in every respect the same as man's, so far as it goes as to size, &c.; similar membranes surround it, and it is encased in a bony or ossific covering, in a similar manner, for the protection of the same. If then medicines act individually on the various faculties of the mind of man we may infer it will be the same with the lower animals; this naturally leads us into the inquiry whether or not there is a plurality

of organs or mental faculties in the brain. Only recently the spinal column of nervous matter was discovered to possess sentient and motor functions, and to Sir Charles Bell we are indebted for the discovery. I presume to go still further and assert that the brain of man and that of the lower animals is composed of a number of organs or mental faculties, and that the nerves are not only the communicators of common sensation and motion, but that their office is more multiform. A nerve, you are aware, is composed of a number of filaments, each distinct in itself. I am led to infer from long consideration of the subject that each filament in the composition of what is called a nerve is a distinct nerve of itself, and is the representative agent of individual faculties of the brain and mind. The circumstance which no doubt you have noticed in everyday life that under peculiar excitement of any of the feelings, a peculiar class of muscles is called into action which naturally leads us to infer that every faculty of the mind has under its influence a particular class of muscles in order for physical oratory. And that we may say with equal propriety and truth that we have a nerve of destructiveness, a nerve of combativeness, a nerve of wonder or marvellousness, a nerve of caution or fear, a nerve of self-esteem, &c., &c., each filament being the nervous agent of a cerebral organ or mental faculty.

The distinctness of the mental faculties is shown in a very remarkable manner under the influence of animal magnetism, wherein the various faculties of the mind may be excited separately and individually at the pleasure of the magnetizer; the change of countenance and demeanour which take place as the different faculties or feelings are excited, show that each organ of the mind has under its influence a distinct class of muscles.

The distinctive action of medicine upon the various faculties of the mind is a marvel in the history of medicine, and may lead to grand results in the treatment of abnormal mental affections.

The provings of aconite on a healthy person show that it excites destructiveness, strong disposition to quarrel, also wonder, fear of spectres; argentum, destructiveness, and secretiveness, ill-humour and aversion to talking; arnica montana, tendency to be frightened, caution, &c.

Arsenicum album.—Fear of solitude, of spectres, and of robbers, with desire to hide oneself, caution, wonder, and secretiveness.

Belladonna.—Fury and rage, with a desire to strike, to bite and to tear everything, combativeness and destructiveness.

Bryonia alba.—Irascibility and passion (destructiveness), desire for things which are ejected when obtained (acquisitiveness).

Calcarea carbonica.—Anxiety and anguish, excited by fancies or frightful stories, also with shuddering and dread during the twilight, or at night—excessive anguish, with palpitations of the heart, and shocks in the epigastrium—disposition to take alarm (caution and wonder).

Croton tiglium.—Grumbling, dislike to labour (destructiveness and self-esteem).

"The anatomical structure of the brain," says Dr. Bennett, "in connection with numerous physiological facts, afford strong reasons for believing that intelligence resides in the cortical substance of the brain; that sensation and motion more immediately depend upon two distinct columns, the one commencing at the optic thalamus, the other at the corpus striatum, and both terminating where they unite inferiorly to form nerves; that the nerves consist of fibres which convey the influence of impressions or nervous currents, to and from the sensitive and motor columns; and that the medullary portion of the brain consists of fibres, which also transmit nervous currents arising from mental operations to and from the cortical substance; together with other fibres which perform the same office between one hemisphere and the other, or different convolutions in the same hemisphere."

"The cortical structure of the brain," continues Dr. Bennett, "is much more vascular than the medullary, and is not fibrous like the medullary, but of a granular nature. It is not a simple layer, but consists of two strata—an internal and an external layer; the first one-fiftieth, the last nine two-hundreth parts of an inch thick; between these is interposed a stratum of white matter, five two-hundredths of an inch thick."

The circumstance of the cortical substance being differently arranged from other portions of nervous matter, being also more highly organised and delicate, would, *a priori*, lead to the conclusion that it is destined for some functions different from the rest; and it is an opinion, supported by many physiologists, that it possesses exclusively those properties necessary for the performance of mental acts."

In the animal kingdom generally, a correspondence is observed between the quantity of grey matter, depth of convolutions, &c., and the sagacity of the animal.

"It is greatly more pertinent," says Dr. Chalmers, "and convincing to say of matter, that it is distributed into such parts as to ensure a right direction and a beneficial application of its powers. It is not so much in the establishment of certain laws of matter, that we deserve the aims or the purposes of intelligence, as in certain dispositions of matter, that put it in the way of being usefully operated upon by the laws. And what a countless variety of such adjustments within the compass of an animal, or even a vegetable framework. Mere laws without collocations would have afforded no security against a turbid and disorderly chaos."

We have a good instance of the neuro-electrical apparatus "in the gymnotus or electric eel, and in the torpedo or electric ray, arrangements are given to those remarkable animals for the purpose of defence, resembling the voltaic apparatus, for they consist of many alternations of different substances. These electrical organs are much more abundantly supplied with nerves than any other parts of the animal, and the too frequent use of them is succeeded by debility and death."

To put in a brief and concise form the principles embodied in

the foregoing observations, I may state that whereas according to the theory in vogue among some authorities, it is supposed that inflammation consists entirely of chemical disturbance of the proper equilibrium, and therefore to be treated mainly by attempts to reduce the natural forces, that along with the enfeebling of these, the disease also may be enfeebled. I am rather inclined to think that we should regard inflammation and, in fact, many other forms of disease, as rather the result of a deranged electrical condition of the brain, nerves, blood, or other component parts of the system, and should therefore try to restore the normal equilibrium by means which our art properly understood happily furnishes. That such action is within our power will, I venture to think, be admitted after a fair and candid consideration of the following exposition :

The allopathic mode of treating inflammation of the lungs, as stated in veterinary works, is bleeding—blistering, roweling, aperients, nitre, digitalis, emetic tartar—these are given with the view to lessen the heart's action, and by so doing lessen the inflammation. There is no decided certainty that the lungs will be thoroughly cured, in fact, the giving of large doses of the above-mentioned medicines is apt to produce aggravated symptoms ; and when continued for some days, a medicinal disease, which is very puzzling to the allopathic practitioner, presents itself.

The homœopathic mode of treating inflammation of the lungs is simple and neat. No blistering, no roweling nor setoning, no torturing the poor animal with turpentine, mustard, ammonia, &c. Medicines are given which are known to have positive action on the lungs, without disturbing any other part of the body. These are aconite, bryonia, phosphorus, tartar-emetic, arsenicum.

The allopathic mode of treating pleuritis is similar to that of inflammation of the lungs.

The treatment by the homœopath is the administration of aconite and bryonia and mercurius.

The allopathic treatment of diarrhœa is to give astringents, such as chalk, opium, catechu, &c.

The homœopathic treatment is to give aconite, veratrum, arsenicum, &c.

Costiveness, by the allopath, is treated with purgatives ; by the homœopath medicines are given that will produce costiveness in a healthy person, as bryonia, nux vomica.

The treatment of the cattle plague, or rinderpest, by the allopath is somewhat indefinite—with the homœopath the treatment is clear. Aconite, arsenicum, phosphorus, veratrum album, represent the symptoms, and to avoid complication I would say that when we have a case or cases of the cattle plague, or rinderpest, which seems a peculiar complication of disease of the mucous and serous membranes, with blood loaded with fibrine, favoured by the richness and abundance of grass, such as we probably never experienced, that the best treatment would be the homœopathic medicines, viz., aconitum and arsenicum. To begin with aconitum—second decimal dilution, twenty drops every twenty minutes for three doses, and

afterwards twenty drops of arsenicum; second decimal dilution to be given every twenty minutes, and continued for six hours, each dose to be given in an ounce of water; after this, a dose every hour, until marked symptoms are visible.

As to preventive measures, it is well known that in all animal bodies, beautiful as is their organization, and splendid as is their vital action, there are the latent germs of destruction, viz., a kingdom of parasites which, when the vitality and neuro-electrical action become weak, like a sneaking rebellious foe takes advantage of one's weakness and rises in destructive rebellion, and if a tonic force is not soon raised to check these incursions, their mastery is certain, and life, in one form, succumbs to life in another shape. As previously mentioned, the minerals are good tonics; for our present purpose in checking the ravages of this disease, I would strongly recommend arsenicum, the third decimal dilution or trituration—known by the homœopathic chemists by the letter B—twenty drops in a little water, once every day for four days running.

Gentlemen, I have given you a very meagre outline of the comparative merits of allopathy and homœopathy, and I have every reason to presume that you are not prejudiced against any inquiry that may extend our limited knowledge; and I feel assured that any remarks you may feel it necessary to make in the course of discussion, will be distinguished by kindly feeling, liberality of sentiment, and sound reasoning.

In consequence of the pressure of business the discussion was postponed until the next meeting.

A vote of thanks was now proposed by *Mr. Greaves*, and seconded by *Mr. Howell*, to the retiring officers, viz., Mr. Dray, President; Messrs. McTaggart, Naylor, and Cuthbert, Vice-Presidents; Mr. Lord, Treasurer; and Mr. Williams, Honorary Secretary.

These gentlemen severally returned thanks.

The following gentlemen were then elected for 1866, viz.:—Mr. McTaggart, President; Messrs. Freeman, Broughton, and Anderton, Vice-Presidents; Mr. Dray, Treasurer; and Mr. Williams, Honorary Secretary.

Mr. Dray then proposed that a testimonial be presented to the Secretary, for his services in connection with the Society. This proposition was seconded by *Mr. Freeman*, and most cordially approved of by all present; and Messrs. Dray, McTaggart, and Naylor were appointed as the Testimonial Committee.

The next meeting of the Society will be held at the Queen's Hotel, Leeds, on the last Friday in January, 1866. This being the Annual Meeting will be succeeded by the Annual Dinner. The business will consist of the President's Inaugural Address, the discussion of the paper on Homœopathy, &c., &c.

The quarterly meetings for 1866 have been appointed to be held at Pontefract, Harrogate, and Bradford.

W. Williams,
Hon. Sec.

LIST OF MEMBERS OF THE ROYAL COLLEGE OF VETERINARY SURGEONS APPOINTED AS GOVERNMENT INSPECTORS, FOR THE SUPPRESSION OF THE CATTLE PLAGUE.

We have endeavoured to make the following list as complete as possible, and any omission will be corrected in our next. The districts belonging to each inspector are not indicated, as they are of necessity subject to alterations, and for the further reason that many country inspectors have neglected to furnish us with the necessary information.

ENGLAND.

Bedfordshire.

Cornelius, John E., Luton

Berkshire.

Flanagan, W. G., Reading
Gadsden, John Wesley, Bracknell
Wheatley, W. A., Reading

Buckinghamshire.

Bennett, John, Stoney Stratford
Bond, Edward, Buckingham
Crowhurst, Eusebius G., Amersham
Lepper, Henry, Aylesbury
Lepper, George Henry, ditto
Meekes, James, Great Marlow
Powell, John, Newport Pagnell
Powell, William, Newton Longville

Cambridgeshire.

Brook, Thomas, Fyfield
Knowles, Robert, Wisbeach

Cheshire.

Darwell, George Henry, Knutsford
Greaves, John, Altringham
Taylor, John Boardmau, Hyde

Cornwall.

Hire, Edward, Penzance

Cumberland.

Bell, J., Carlisle
Carlisle, Joseph, Carlisle
Thompson, Henry, Aspatria
Reynolds, Richard L., Alfreton

Derbyshire.

Leech, Thomas M., Bakewell
Martin, Francis Else, Chesterfield
Platts, Robert, Chesterfield
Poyser, George, Ashbourne
Reynolds, R. S., Alfreton

Devonshire.

Austin, Thomas, Honiton
Collings, John J., Plymouth
Dyer, Richard H., Torquay
Ferris, Henry, Dittisham
Heath, James P., Exeter

Dorsetshire.

Redwood, Joseph, Dorchester

Durham.

Allison, William, Thornley
Hall, Robert, Stockton-on-Tees
Hunting, Charles, South Hetton
Peele, Henry, West Hartlepool
Plews, Thomas, Stocton
Thompson, Thomas, Sunderland

Essex.

Hazell, John J., Great Bromley
Helmore, William, Stratford
Hutton, Robert R., Great Yeldham
Lawrence, Henry Stewards, Romford
Norris, Joseph, Colchester
Scaman, Isaac, Saffron Walden
Shave, Edward S., Chelmsford
Skelton, Richard, jun., Leyton
Tayler, Rowland, Colchester
Taylor, James, Wick
Young, John, Felsted
Wallis, William S., Halstead
Webb, Henry, New Stampford

Gloucestershire.

Barling, Frederick Wm., Newnham
Hobbs, Henry, Newnham
Thomas, Richard W., Tewkesbury
Vick, John, Gloucester

Hampshire.

Barford, John Davis, Southampton
Burden, William, ditto
Colebrook, Charles, Basingstoke
Crafts, Howell W., Fareham
Gould, George James, Southampton
Green, William Smith, Alton
Gregory, J. G., Portsmouth
Redford, Thomas, Winchester

Herefordshire.

Hill, John Roberts, Leominster
Hirst, Charles Samuel, Barnet
Proctor, Harrison, Hertford
Wilson, William, Berkhampstead
Webb, Thomas G., Bishop's Stortford

Huntingdonshire.

Dickens, Charles, Kimbolton
Fordham, Thomas B., Godmanchester

Isle of Wight.

Wheeler, Edwin, Rookley

Kent.

Boulter, Frederick C., Woolwich
Bulmer, W. H., Dover
Cowie, James, Bromley
Crowhurst, Charles, Maidstone
Crowhurst, James, Canterbury
Fordham, George, Willesborough
Gregory, Thomas, Tunbridge
Hogben, Henry, East End Hill, Hythe
Ingersoll, Frederick Richard, Lewisham
Martin, John Bean, Rochester
Morgan, Charles, Nonnington, Wingham
Plomley, John Croft, Maidstone
Poulton, F. J., Gravesend
Shaw, Henry K., Sydenham

Lancashire.

Buckley, Samuel L., Blackburn
Ellis, John, Liverpool
Ellis, Peter, ditto
Heaps, William, Preston
Smith, John, Ormskirk
Taylor, James, Oldham
Twist, Charles, Woolton

Leicestershire.

Bailey, Edward, jun., Leicester
Goude, John M., Hinckley

Lincolnshire.

Batchelder, John, Grantham
Bland, William James, Boston
McHugh, John T., Brigg
Sharman, Thomas B., Old Leake

Middlesex.

Boughton, Thomas Peter, Hounslow
Broad, James C., Praed Street, Paddington
Brown, Geo. T., White Horse Yard, New Cavendish Street
Dale, William, Stanmore
Farrow, William, Commercial Street, Whitechapel
Giltro, William, Hampstead
Hancock, Henry Michael, Uxbridge
Moss, F. W., Earl Street, Blackfriars
Priestman, Henry, Caledonian Road
Shirley, William, Twickenham
Simmonds, William, High Street, Poplar
Tegg, George, jun., Stamford Hill
Woodger, Joseph, jun., Bishop's Mews, Paddington

Monmouthshire.

Lewis, George, Monmouth

Norfolk.

Baldwin, George Thomas, Fakenham
Beart, Walter James, Lynn
Buckingham, H., Harleston.
Carter, Charles N., Swffham
Chambers, Wm., Docking
Crabbe, William C., Earsham
Cross, George Thomas, King's Lynn
Denny, Joshua, Roughton
Ellis, William, Hempnall
Hammond, John, Bale, Thetford
King, Edward James, Diss
Overed, John Davey, Blofield
Plumbley, George H., Southrepps
Rattee, Daniel Elmer, Fundenhall
Riches, John Worship, Acle
Shipley, William, North Walsham
Shipley, William, Great Yarmouth
Smith, William, Norwich
Whitwell, Richard, Norwich
Worm, James, Watton
Wright, James, Burnham Overy

Northamptonshire.

Garratt, Samuel S., Northampton
Mackinder, Richard, Peterborough
Merrick, Thos. James, Northampton

NORTHUMBERLAND.

Aitken, Robert, Felton
Allison, H. Watson, Long Benton
Stephenson, Clement, Newcastle-on-Tyne

NOTTINGHAMSHIRE.

Cave, Thomas, Nottingham
Pyatt, Henry, Nottingham
Reynolds, Richard, Mansfield

OXFORDSHIRE.

Mellett, Edward, Henley-on-Thames
Page, Charles N., Banbury

SHROPSHIRE.

Cartwright, William A., Whitchurch
Copeland, Lawrence, Shiffnal
Dayus, Charles, Longor
Litt, William, Shrewsbury
Payne, Colin V., Market Drayton

SOMERSETSHIRE.

Barrell, Thomas, Keynsham
Broad, Thomas Dike, Bath
Cade, Thomas, Bristol
Gibbs, Joseph, Taunton
Leigh, Nathaniel, Bristol

STAFFORDSHIRE.

Carless, John, Stafford
Carless, William, ditto
Checkett, Benjamin, Wolverhampton
Walters, Robert G., Stone

SUFFOLK.

Coe, Walter, Bury St. Edmunds
Fenner, William Lyle, Clare
Girling, Robert, Ipswich
Grimmer, Charles, Bungay
Harvey, Stephen S., Lowestoft
Hutton, Josiah, Sudbury
Newson, Henry, Beccles
Petley, Edward, Barrow, near Bury St. Edmunds
Shorten, Charles T., Ipswich
Taylor, Edwin, Bury St. Edmunds
Thurston, Walter, Fressingfield

SURREY.

Boden, Hesman, Upper Russell Street, Bermondsey
Cross, William Francis, Battersea
Donaldson, George Evans, Epsom
Evershed, Stephen, Godalming
Ernes, and Lowe, William, Dockhead, Bermondsey.
Forbes, Matthew B., Reigate
Legge, Henry Charman, Dorking
Lupton, Jas. Irvine, Richmond
M'Cutchan, John, Farnham
Stanley, Frederick Thos., Borough

SUSSEX.

Crofts, Henry, Arundell
Crowhurst, James, Warbleton
Dawtrey, Jeffery, Chichester.
Hopkins, James, Pulborough
Vine, Vincent, Lewes

WARWICKSHIRE.

Ison, William Charles, Atherstone
Proctor, Alfred B., Meriden
Watson, Walter, Rugby

WORCESTERSHIRE.

Blakeway, Francis, Stourbridge

YORKSHIRE.

Anderton, John Wilkinson, Skipton-in-Craven
Anthony, Paul, Tickhill, near Doncaster
Barker, Charles, Malton
Broughton, William, Woodhouse, Leeds
Carter, Joseph S., Bradford,
Collins, Thomas, ditto
Cooper, Job, Market Weighton, Brough
Cuthbert, John, Leeds
Dray, Edward C., ditto
Emmot, D. C., Keighley
Fryer, J., Kirby, Fleetham
Horne, Thomas, Barnsley
Kay, John, Pontefract
Mather, George I., Doncaster
Secker, Thomas, Ripon

WALES.

Bodington, George, Cauton, Cardiff | Kennedy, Thomas, Wrexham

SCOTLAND.

ABERDEENSHIRE.
Snowball, John, Huntley

BERWICKSHIRE.
Hogarth, George, Berwick

FORFARSHIRE.
Lyon, William, Forfar
Taylor, Alexander, Brechin

LANARKSHIRE.
M'Call, James, Glasgow

LINLITHGOWSHIRE.
Borthwick, John, Kirkliston

PEEBLESHIRE.
Ferguson, Patrick, Peebles.

ROXBURGHSHIRE.
Robertson, William, Kelso

MISCELLANEA.

EXTRAORDINARY CALCULATION.

THE number of human beings living at the end of the hundredth generation, commencing from a single pair, doubling at each generation (say in thirty years), and allowing for each man, woman and child, an average space of four feet in height and one foot square, would form a vertical column, having for its base the whole surface of the earth and sea spread out into a plane, and for its height 3674 times the sun's distance from the earth. The number of human strata thus piled one on the other would amount to 460,790,000,000,000.—Sir John Herschel in the *Fortnightly Review.*

OBITUARY.

FATAL ACCIDENT AT A RAILWAY STATION.—An inquest was held at Biggleswade on Saturday on the body of Philip Gadd, veterinary surgeon, whose death occurred as follows:—Wm. Charles Ford stated—I am acting with my brother in his business as veterinary surgeon. I knew the deceased. He had purchased my brother's business, and came to Biggleswade about a week ago. On Thursday evening he went with me to the railway station. I was going up to London by the 7.50 train. I was in the carriage, standing up, when the train moved on. The deceased was standing on the step talking with me, but hearing the guard's whistle I asked him to get down. He made a jump, and I saw him fall between the platform and the carriages. I should think that seven or eight carriages passed over him. The train was stopped. The injuries were such as to cause instant death. The jury returned a verdict of "Accidental Death." The deceased was twenty-seven years of age.—*Bedford Times.*

HENRY JOHN FITTER.—We have also to record the death of Henry John Fitter, M.R.C.V.S., who died in India, September 20th, aged forty years. Mr. Fitter's diploma bears date May 11th, 1848.

ERRATA IN NO. 454.

Page 648, lines 32 and 33, *for* "℥iss to ℥ij, *read* "℥iv to ℥vj."
„ 674, line 12, *for* "both," *read* "all."
„ 675, „ 8, *for* "seeking," *read* "sinking."

THE

VETERINARIAN.

VOL. XXXVIII. No. 456. DECEMBER, 1865. Fourth Series. No. 132.

Communications and Cases.

CATTLE PLAGUE.

It is a somewhat alarming fact, that notwithstanding the efforts that have been made to arrest the progress of the cattle plague, it has extended over nearly the whole of England and two thirds of Scotland during the last four months.

At the commencement of June last the malady was only known in our country by rumour, as a Continental pest. Now we have sad proof of its presence in the official reports of losses to the extent of 21,678 animals. If we were to add another 5000 to this we should probably be still within the truth. In the face of these facts, and looking at the matter fairly, we are constrained to admit that all efforts up to the present time have had but little influence in preventing the spread of the disease. It is not now the question how much worse affairs might have been, if no precautions had been taken; we are, of course, at liberty to assume that, in the absence of any system of restraint, half the stock in the country might have been attacked by the disease; but setting possibilities on one side, the fact really remains that in June last the cattle plague appeared in a few places in London—it was discovered almost immediately—the Government was made aware of its existence—orders in council were issued, inspectors were appointed, and in four months the plague had spread from the original centre, until nearly every county in England and two thirds of Scotland had become infected.

Whether or no the first orders issued by the Government were equal to the emergency, we do not intend to discuss, for the simple reason that there is no evidence to guide us to a conclusion. The fact is they have not been fairly tested. That very characteristic trait in the English character —dogged obstinacy—interfered, and every suggestion met with determined opposition. The right to do what one likes with his own was gallantly asserted, at all risks. As soon as the disease was known to exist among the cows in a shed, or the oxen in the field, each man became suddenly alive to the fact that his property was about to be confiscated, and accordingly, with a disregard of consequences, he immediately did the best he could (for himself) under the circumstances—sold off the infected animals in the markets, and pocketed the money. The proceeding altogether was so perfectly natural that it might have been foreseen. To expect a man to give notice of a fact, the knowledge of which would at once place his stock in the hands of a Government inspector, with powers to act as he deemed necessary for the good of the country, but without the power to offer the owner a single penny in the way of compensation, was to expect an excess of patriotism, a spirit of self-sacrifice, that has, perhaps, been found in all ages only in the few, and certainly in no period of the world's history has been characteristic of the masses.

Nevertheless, no other course could be consistently adopted by a constitutional Government at the outset. The people were informed of the existence of a serious evil—they were directed to give notice of its presence wherever they should discover it, in order that steps might be taken to eradicate it. The people declined to see the matter in its public aspect, and preferred the individual view. The people, by consequence, will suffer—have already suffered, although not, perhaps, to an alarming extent, still sufficiently to show what may be expected unless further measures shall succeed in arresting the course of the plague.

If it had, at first, been arranged to pay for all losses occasioned by the acts of Government officials in carrying out their instructions, there would have been little opposition to the order, although a wide door would probably have been opened for attempts at fraud. Still, if it could have been shown that it was to every one's immediate pecuniary interest to make known the existence of the disease among his stock, there would have been no lack of notices of the outbreak. Nothing apparently could be more simple than this. It is self-evident in its perfect applicability to

the wants of the times. Cow-keepers advance the idea with praiseworthy impartiality—Why (say they) did not the Government at once give notice that, immediately on the appearance of the cattle plague among a number of cows, they would take charge, by the Inspector, of the lot, and pay a fair amount for every animal lost to the owner? Doubtless in the exercise of this paternal duty the Government would have met with filial obedience; but, unhappily for the interests of humanity, the exaggerated exercise of paternal feelings involves—FUNDS—which, it appears, were not at hand for the purpose. It is certainly a pity that a scheme at once so simple and so comprehensive should fail for want of money. There is another aspect in which the matter may be viewed—assuming that no difficulty existed on the score of funds, there are serious objections to using the public money for compensating private losses. If it were true, which it is not, that every one possessed a rigid integrity which might operate as a check upon his claims, there would be a guarantee that the money would be wisely expended; but who does not perceive that the dishonest trader would gain the most, and that the discovery of chicanery in some instances would cast a doubt upon all, and prevent, probably, many from attempting to obtain what would in all likelihood expose them to injurious suspicions? The opportunities which would be offered for dishonest practices seem to us to be so numerous that it is doubtful if the evil would not overpower the good that might result from the establishment of any system of compensation. With more reason it has been remarked that the Government should at least have offered to pay for animals destroyed by order of their Inspectors. But let this point be clearly understood—the indiscriminate slaughter clause has excited much ire throughout the country, really with very little justice. The cases in which the exact intention of the order have been carried out, we have reason to believe, have been very few indeed, that is to say, where animals have been destroyed as soon as attacked, in order to prevent the spread of the infection; by far the majority have been kept until it became evident that there was no hope of recovery, and when a few hours more would have settled the question and saved the slaughterman's office. The "indiscriminate slaughter" has generally been by the owner's wish, to save as much as he could of the property that he knew would be destroyed unless realised at once. The clause, however, gave powers which were opposed to English notions of the liberty of the subject, and consequently, whether enforced or not, it served as a mark for attack. Curiously enough, however, in all the hot discus-

sions we have heard upon the point, we have never met with an individual who complained of having been a victim; the most furious denunciations always seemed to come from those whose feelings were excited by the bare idea that *some one might, could, or would enter their premises and destroy their cattle indiscriminately*. Under present circumstances the power to "seize and slaughter" is not likely to avail much.

Before everything now stands the question, what other steps are to be taken ere the cattle plague becomes a great national calamity? Our losses, compared with the stock in the country, are trifling, but the disease is still on the increase; the system of moving diseased animals from place to place continues; not a market-day passes but some are seized by the Inspector; and although there is an order to the effect that animals shall only be sent to the Metropolitan Market for immediate slaughter, it is in evidence that many of them are still purchased and conveyed to great distances, and even exposed in other markets. So long as these things continue we see no probability of the decline of the plague. No efforts on the part of the Government will avail unless the people will recognise the danger and lend their aid to avert it; the present policy is most suicidal, and, if it shall be persisted in, the country for years to come will have to deplore it.

Primarily, as a preventive measure, some means must be devised to prevent the continuance of traffic in diseased animals. While pest-stricken beasts are travelling about the country, by the road and rail, it is absurd to expect any cessation of disease; but if we could once ensure that animals would remain fixed to the locality where they took the disease, one grand step in the right direction would be taken. Next in importance is the complete isolation of all infected animals; this, one would imagine, the owner, for his own sake, would endeavour to make as complete as possible. Disinfection of premises, whether stalls, sheds, straw-yards, or fields, is of the utmost importance, and should be conducted on an extensive and liberal scale. The proper disposal of carcases is a matter of no mean concern, and, where no convenient places exist for efficient burial, every part of the animal should be thoroughly disinfected before the carcase is removed from the premises.

So far as the importation of foreign stock is concerned, we see no measure at present worthy of recommendation, save that of the slaughter of the animals on landing; quarantine is out of the question, but arrangements for slaughtering and dressing at certain ports might be made, and the animals that would then be sent to the Metropolitan Market,

being thus reduced in number, might be easily slaughtered in the neighbouring abattoirs. There are difficulties to be overcome before these suggestions, or any modification of them, can be carried into effect. We should much like to see the scheme which would be unassailable on this ground; some stringent measures must be adopted before long, and as it appears the people will not act for themselves, it becomes the duty of the Government to assert its right to legislate for the good of the many in defiance, if needs be, of the protests of the few.

Since writing the above the subjoined Order in Council has been issued. It provides for some of the requirements to which we have alluded.

CONSOLIDATED ORDER OF COUNCIL.

1. This Order shall extend to all parts of Great Britain.

2. The said Orders, dated respectively the 24th of July, the 11th, 18th, and 26th of August, the 22nd of September, and the 31st of October, 1865, are revoked, with the exception of so much of the said Order of the 24th of July, 1865, as empowers the Clerk of Her Majesty's Privy Council to appoint inspectors within the limits of the metropolitan police district, provided that such revocation shall not affect any appointment made, or notice given, or any act done, or penalty recoverable, under any Order hereby revoked.

3. In this Order the word "animal" shall mean any cow, heifer, bull, bullock, ox, calf, sheep, lamb, goat, or swine; and the word "inspector" shall include any inspector appointed or to be appointed as aforesaid by the said Clerk of Her Majesty's Privy Council, or appointed under this Order, or under any of the said revoked Orders.

4. Whenever the local authority, as hereinafter defined, shall be satisfied of the existence of the said disorder in, or have reason to apprehend its approach to, the district over which his or their jurisdiction extends, it shall be lawful for such local authority, if he or they shall think fit, from time to time to appoint one or more veterinary surgeon or surgeons, or other duly qualified person or persons, to be an inspector or inspectors, for the purpose of carrying into effect the rules and regulations made by this Order, within the district for which he or they shall have been appointed. And the same authority may, from time to time, revoke such appointment.

5. Subject to the powers herein reserved to the Clerk of

Her Majesty's Privy Council, the local authority within the City of London, and the liberties thereof, shall be the Lord Mayor; in any municipal borough in England or Wales, the mayor; in any petty sessional division in England or Wales (exclusive, so far as relates to the jurisdiction of the inspector, of so much of the said division as lies within the limits of a municipal borough for which an inspector has been appointed), the justices acting in and for such petty sessional division. The local authority in any burgh or town in Scotland which is subject to the jurisdiction of a provost or other principal magistrate shall be the provost or such principal magistrate; and in any other places in Scotland not within the jurisdiction of such provost or other principal magistrate, the justices of the county in sessions assembled.

6. Every inspector shall from time to time report to the local authority by which he is appointed, the steps taken by him for carrying into effect the regulations prescribed by this Order; and the local authority shall certify, in such manner as may be directed by one of Her Majesty's Principal Secretaries of State, the number of days that such inspector has actually been engaged in the performance of his duty, and the number of miles travelled by him while so engaged.

7. Every inspector shall furnish the Lords of the Council with such information in regard to the said disorder as their lordships may from time to time require.

8. Every person having in his possession, or under his custody, any animal labouring under the said disorder, shall forthwith give notice thereof to the inspector of the district within which such animal may be, or if no inspector shall have been appointed for such district then to the officers hereinafter named, according to the place where such animal may be, that is to say: within the metropolitan police district, to the said Clerk of the Privy Council; within the City of London, and the liberties thereof, to the Lord Mayor; within any other borough, burgh, or town subject to the jurisdiction of a mayor, provost, or other principal magistrate, to such mayor, provost, or other principal magistrate; elsewhere in England, to the clerk of the justices acting in and for the petty sessional division; and elsewhere in Scotland, to the clerk of the peace of the county.

9. Every inspector shall have power, within the district for which he is appointed, to enter upon and inspect any premises or place in which any animal or animals which he suspects to be labouring under the said disorder may be

found, and to examine and inspect, whenever and wherever he may deem it necessary, any animal which he suspects to be labouring under the said disorder within such district.

10. Every inspector shall have power within his district to cause to be cleansed and disinfected, in any manner which he may think proper, any premises in which animals labouring under the said disorder have been, or may be, and to cause to be disinfected, and if necessary destroyed, any fodder, manure, or refuse matter, which he may deem likely to propagate the said disorder. And every owner or occupier of such premises shall obey any order given by such inspector for that purpose.

11. Every person having in his possession, or under his custody, any animal labouring under such disorder, shall keep such animal separate from all other animals, and no person shall send or bring to any fair or market, or expose for sale, or send or carry by any railway, or by any ship, or vessel coastwise, or place upon, or drive along, any highway or the sides thereof, any such animal.

12. No person having in his possession, or under his custody, any animal labouring under the said disorder, or which has been in the same shed or stable, or in the same herd or flock, or in contact with any animal labouring under the said disorder, shall remove such animal alive from his land or premises, without the licence of an inspector; or if no inspector has been appointed for the district within which such animal may be, without the licence of a justice of the peace acting in and for the jurisdiction within which such animal may be; provided that such licence shall be in writing, and shall only permit the removal of such animal to some place where it can be conveniently kept apart from all other animals until such inspector or justice is satisfied that there is no reasonable probability of such animal propagating the said disorder.

13. No person shall place or keep any animal labouring under the said disorder in any common or unenclosed land, or, if the animal be in a district for which an inspector has been appointed, in any field or pasture where, in the judgment of the inspector, such animal may be likely to propagate the said disorder.

14. Every inspector shall have power within his district to direct that any animal labouring under the said disorder, or which he suspects to be labouring under the said disorder, shall be kept separate from animals free from the said disorder. And every person having such animal in his possession or under his custody shall obey any direction given by

such inspector for that purpose. And where the person having such animal in his possession or under his custody shall disobey such direction given by such inspector, then, and in such case, and in such case only, shall such inspector have power to seize and slaughter, or to cause to be seized and slaughtered, such animal.

15. All animals having died of the said disorder, or having been slaughtered on account thereof, shall be buried as soon as practicable, in any convenient place, with their skins and with a sufficient quantity of quicklime or other disinfectant, and shall be covered with at least five feet of earth, or shall, in districts for which an inspector has been appointed, be otherwise disposed of, with the consent of the owner, in manner directed by the inspector, and the inspector shall have power to cause the carcase to be disinfected when necessary previous to the burial or other disposal thereof.

16. Whenever any local authority, as hereinbefore defined, declares, by notice published in any newspaper circulating within his or their jurisdiction, that it is expedient, for a time to be specified in such notice, to prevent the removal of animals as hereinbefore defined, or some specified description thereof, either absolutely or except under such conditions as such local authority shall think fit to impose, with a view to prevent the spreading of the said disorder, to any market or fair, or to any place whatever within his or their jurisdiction for the purpose of exhibition or sale, then in such case, and after the publication of such notice, it shall not be lawful for any person to bring or send any such animal or description thereof, except in accordance with such conditions as aforesaid, into such market or fair, or to any place within such jurisdiction, for the purpose of exhibition or sale, or to receive, exhibit, buy, or sell any such animals so brought or sent.

17. Where the removal of animals or any specified description thereof, to any market or fair, or elsewhere, for the purpose of exhibition or sale, has been or shall be prohibited, absolutely or conditionally, within the jurisdiction of any local authority in pursuance of any of the powers conferred by this or any of the said recited Orders, and complaint is made by such local authority to one of her Majesty's Principal Secretaries of State that the local authority for some adjoining or neighbouring district neglects or refuses to publish a notice with a view to a similar prohibition within the jurisdiction of such last-mentioned authority, and that, in consequence of such neglect or refusal, there is reason to apprehend the spreading of the said disorder, then in such

case it shall be lawful for such Secretary of State, and he is hereby empowered, to publish such notice in any newspaper circulating within the jurisdiction of such last-mentioned local authority, and such notice so published by the Secretary of State shall have the same effect as if it had been published by the local authority so neglecting or refusing as aforesaid; provided that nothing contained in this or the preceding clause of this Order shall be held to prohibit any person from exhibiting or selling on his own land or premises any animal belonging to him which has been on such land or premises for not less than fourteen days previous to such sale.

18. Whenever any local authority, as hereinbefore defined, declares by notice published in any newspaper circulating within his or their jurisdiction, and also by notice published in some newspaper or newspapers circulating within the county or counties bordering upon the county within which the jurisdiction of such local authority is situate, that it is expedient, for a time to be specified in such notice, that animals, as hereinbefore defined, or some specified description thereof, shall not, either absolutely or except under such conditions as such local authority shall think fit to impose, with a view to prevent the spreading of the said disorder, be brought from any other part of Great Britain into any place within his or their jurisdiction, it shall not be lawful for any person to bring or send any such animal, or description thereof, except in accordance with such conditions aforesaid, from any place in Great Britain beyond such jurisdiction into any place within such jurisdiction; and the copy of any such notice shall be sent forthwith by the local authority by whom it is made to the Clerk of her Majesty's Privy Council, and shall be published by him in the *London Gazette*: Provided always, that nothing contained in this clause of this Order shall make it unlawful for any person to send or carry any such animals by railway through such jurisdiction; and provided also, that nothing contained in this clause of this Order shall make it unlawful for any person to bring or send, with the licence of any two justices acting in and for the jurisdiction to which such notice applies, any such animals, from any land or premises in his own occupation, and beyond such jurisdiction, to any other land or premises in his own occupation within such jurisdiction.

19. Any such local authority, or any of her Majesty's Principal Secretaries of State, may, from time to time, if he or they think fit, renew, revoke, or modify all or any part of any

notice published or to be published by them or him under the powers given under this or the said revoked Orders, either absolutely or under such conditions as to such local authority or to such Secretary of State may seem proper, by a further notice to be published in the same manner as such notice is required to be published.

20. During the continuance of the "Cattle Plague" within the said City of London, or the metropolitan police district, no person shall bring or send, or cause to be brought or sent, any cow, heifer, bull, bullock, ox, or calf, to the Metropolitan Cattle Market, except for the purpose of being there sold for immediate slaughtering; and every such animal so brought or sent shall, before being allowed to leave the said market, and although such animal may not have been sold, be marked in the manner in which cattle are ordinarily marked for slaughter in the said market, *videlicet*, by clipping the hair off the end of the tail. And the officers of the said market shall cause such mark to be duly made. And no person shall buy or sell, or cause to be bought or sold, any such animal in the said market, except for immediate slaughtering; and every person buying any such animal in any such market shall slaughter or cause the same to be slaughtered, in all cases within seven days of such purchase, and if such animal be removed beyond the limits of the metropolitan police district, within forty-eight hours after such removal.

21. This Order shall be in force until the 1st day of March next, and no longer, unless continued by some further Order.

22. Every person offending against this Order shall, in pursuance of the said Act, for every such offence forfeit any sum not exceeding £20, which the justices before whom he or she shall be convicted of such offence may think fit to impose.

(Signed) ARTHUR HELPS.

Subjoined we add the official returns of the losses, from the Veterinary Department of the Privy Council.

CATTLE PLAGUE INQUIRY.

VETERINARY DEPARTMENT OF THE PRIVY COUNCIL OFFICE,
2, VICTORIA STREET, LONDON, S.W.;
November, 1865.

Total Number of Diseased Animals reported since the commencement of the Disease.

COUNTIES OR DISTRICTS.	Total number of Farms, Sheds, or other Places in which the Disease has appeared.	Total number of Cattle on Farms, in Sheds, or other Places where the Disease has been officially reported to exist.	Attacked.	Killed.	Died.	Recovered.	Remaining.	Date of first Case reported.
ENGLAND.								
Bedford		402	258	63	138	18	39	
Berks		895	481	92	291	64	34	
Buckingham		723	236	96	96	21	23	
Cambridge		938	248	117	83	10	38	
Chester		909	234	38	96	13	87	
Cornwall		203	80	16	47	...	17	
Cumberland		90	32	29	1	2	...	
Derby		309	94	52	20	9	13	
Devon		152	87	44	34	5	4	
Dorset		12	6	...	6	...	...	
Durham		338	138	62	53	22	1	
Essex		2,189	1,313	264	780	158	111	
Gloucester		140	53	33	17	1	2	
Hants		535	217	54	138	16	9	
Hereford		...	...	...	...	...	...	
Hertford		250	90	35	33	17	5	
Huntingdon		444	218	67	115	1	35	
Kent		1,608	866	300	465	52	49	
Lancaster		843	366	139	146	36	45	
Leicester		109	22	12	7	...	3	
Lincoln		370	137	53	45	16	23	
Middlesex*		...	...	...	...	...	...	
Monmouth		...	...	...	...	...	...	
Norfolk		3,176	1,422	677	529	37	179	
Northampton		1,690	474	193	228	27	26	
Northumberland		1,614	561	216	267	29	49	

Counties or Districts.	Total number of Farms, Sheds, or other Places in which the Disease has appeared.	Total number of Cattle on Farms, in Sheds, or other Places where the Disease has been officially reported to exist.	Attacked.	Killed.	Died.	Recovered.	Remaining.	Date of first Case reported.
ENGLAND (*continued*)								
Nottingham		59	23	8	14	1	...	
Oxford		107	39	3	25	8	3	
Rutland		...	...	...	...	...	...	
Salop		406	51	24	21	...	6	
Somerset		11	11	4	7	...	...	
Stafford		309	149	48	77	6	18	
Suffolk		1,962	940	418	376	56	90	
Surrey		2,581	1,037	400	463	80	94	
Sussex		3,203	1,008	472	439	67	30	
Warwick		895	219	60	116	22	21	
Westmoreland		...	...	...	...	...	...	
Wilts		77	7	5	1	...	1	
Worcester		63	9	3	6	...	...	
York		3,359	1,419	236	789	75	319	
Counties of England		30,971	12,545	4,333	5,969	869	1,374	
Metropolitan Police District*		10,594	6,031	2,837	2,436	181	577	
England (Total)		41,565	18,576	7,170	8,405	1050	1,951	
WALES.								
Anglesey		...	...	...	...	...	...	
Brecon		...	...	...	...	...	...	
Cardigan		...	...	...	...	...	...	
Caermarthen		...	...	...	...	...	...	
Carnarvon		...	...	...	...	...	...	
Denbigh		905	354	55	220	19	60	
Flint		11	11	1	9	...	...	
Glamorgan		...	...	...	...	...	...	
Merioneth		...	...	...	...	...	...	
Montgomery		...	...	...	...	...	...	
Pembroke		...	...	...	...	...	...	
Radnor		...	...	...	...	...	...	
Wales (Total)		916	364	56	229	19	60	

Counties or Districts.	Total number of Farms, Sheds, or other Places in which the Disease has appeared.	Total number of Cattle on Farms, in Sheds, or other Places where the Disease has been officially reported to exist.	Attacked.	Killed.	Died.	Recovered.	Remaining.	Date of first Case reported.
SCOTLAND.								
Aberdeen		368	235	168	64	3	...	
Argyle		...	...	...	—	...	...	
Ayr		293	66	11	22	...	33	
Banff		...	...	...	...	...	...	
Berwick-on-Tweed		417	52	15	17	...	20	
Bute		...	...	...	...	...	...	
Caithness		...	...	...	...	...	...	
Clackmannan		92	25	4	11	8	2	
Dumbarton		258	139	13	71	16	39	
Dumfries		337	64	4	29	...	31	
Edinburgh		2,168	1,068	159	667	100	142	
Elgin, or Moray		...	...	...	...	...	...	
Fife		1,651	626	70	338	97	121	
Forfar		7,249	2,440	511	1,054	257	618	
Haddington		443	82	11	39	9	23	
Inverness		...	...	...	...	...	...	
Kincardine		35	6	5	...	1	...	
Kinross		130	25	2	20	1	2	
Kircudbright		...	...	...	...	...	...	
Lanark		2,950	2,284	583	1,016	136	549	
Linlithgow		231	160	36	93	14	17	
Nairn		...	...	...	...	...	...	
Orkney and Shetland		...	...	...	...	...	...	
Peebles		34	3	2	...	1	...	
Perth		1,375	529	84	252	49	144	
Renfrew		229	117	61	38	5	13	
Ross and Cromarty		...	...	...	...	...	...	
Roxburgh		117	11	3	2	...	6	
Selkirk		...	...	...	...	...	...	
Stirling		1,442	560	30	313	11	206	
Sutherland		...	...	...	...	...	...	
Wigtown		...	...	...	...	...	...	
Scotland (Total)		19,819	8,492	1,772	4046	708	1,966	
England (Total)		41,565	18,576	7,170	8,405	1,050	1,951	
Wales, ditto		916	364	56	229	19	60	
Scotland, ditto		19,819	8,492	1,772	4,046	708	1,966	
Total ...		62,300	27,432	8,998	12,680	1,777	3,977	

(Signed) ALEXANDER WILLIAMS, *Secretary.*

STRICTURE IN THE ŒSOPHAGUS OF A HORSE.

By Professor Varnell, Royal Veterinary College.

Having, in October last, received a very interesting specimen of stricture of the œsophagus of a horse, with a detailed account of the case, from Mr. S. Newman, I laid it before the members of the Veterinary Medical Association, and, although but little discussion took place, considerable interest seemed to be evinced by the members on listening to the particulars. The history is as follows:

Havant, Hants; *Oct. 23rd*, 1865.

Dear Sir,—I send you by the South Western Railway portions of the trachea and œsophagus of a three-year-old colt, late the property of W. C. Turner, Esq., of Hayling, a short history of which is appended. Thinking it an interesting as well as an unusual case, I should value your opinion on it; and should you think it deserving a page in the *Veterinarian*, I shall be amply repaid for any trouble I have taken.

I remain,
Faithfully yours,
Samuel Newman.

To Professor Varnell.

August 12th.—Called to a case of what apparently was "strangles;" the usual treatment was adopted.

18th.—No suppuration had yet taken place, and the colt was labouring for breath; indeed, suffocation seemed inevitable, tracheotomy was therefore immediately performed, which afforded instant relief. The animal went on well till—

September 2nd, when the unfavorable symptoms partially recurred, aggravated by great irritation of the œsophagus which caused the expulsion of food through the nostrils, and, to a small extent, through the opening made in the trachea. My friend Mr. Gregory, of Portsmouth, kindly saw the case with me, and considered it to be one of spasmodic contraction of the gullet. Fluids, consisting of linseed tea, gruel, &c., were prescribed with marked benefit. From this time till the day of his death the state of the colt varied considerably, the same symptoms recurring at short intervals, and the difficulty of swallowing gradually increasing. He died on the 20th of October, being about eight weeks from the time the disease was first noticed.

On examining the throat aftcr death the submaxillary and parotid glands were found to be healthy, but therc was seemingly a large tumour in the gullet, which, however, proved to be the uppcr portion of the œsophagus distended by a mass of thoroughly mastieated food, which had an appearanee of having been lodged there some days. The gullet being opened its entire length, at its upper third a band of about two and a half inches in breadth was found to be existing, but seemingly denuded of mucous membrane. At eaeh edge of this band the membrane was thickened and presented the appearanee of having been rolled up into an unyielding eord, whieh, narrowing the eanal at the two edges of the denuded portion, formed the stricture whieh eaused death. Above the stricture the eoats of the œsophagus were attenuated almost to transpareney, forming thc false stomach, if I may so call it, in whieh the food lodged; while the mueous membrane below the lower seat of stricture was eorrugated and thickened. No other portions were examined.

SAMUEL NEWMAN.

Having briefly described the nature of the specimen, I offered a few general remarks on the case, observing that, although strieture of the œsophagus is not of very eommon oceurrence, that, nevertheless, cases of thc kind are occasionally met with.

This ease is espeeially valuable to the junior practitioner, by serving as a guide to diagnose similar ones. It also suggests the neeessity of making full inquiries respecting every eircumstanee that might possibly produce symptoms like those found to exist in this instance, and to ascertain by manipulation or otherwise the physieal charaeter of similar swellings, for wc should then be able to givc a more deeided opinion as to their nature and the eourse to bc adopted with a view to effeet a cure.

With respeet to the lesions alluded to by Mr. Newman, thc specimen sent verifies the statements he has made in his eommunieation. The case was, no doubt, a very difficult one to diagnosc, and we need not be surprised that Mr. Newman should, at the onset, have eome to the conelusion that the horse was labouring under an attaek of strangles, and that he directed his treatment accordingly. There was not sufficient evidence to convinee Mr. Newman, or even to raisc a suspicion in his mind, that the œsophagus was involved in the way it was found to be, although Mr. Gregory suggested that therc might bc "spasm of the œsophagus," and whieh, in effeet, would in some degree be equivalent to a stricture.

Even had the case been correctly diagnosed in the first instance a cure could not have been effected. It is true the accumulated mass in the dilated portion of œsophagus might have been removed by an operation, but the lesion of the mucous membrane could not have been restored, and the pouch would have filled again. Thus, although life might have been prolonged for a time, eventually the animal must have died.

In revising the history of this case I cannot see that Mr. Newman could have treated it otherwise than he did. He combated the most urgent symptom, namely, threatened suffocation, by opening the trachea, and in other respects he adopted the usual course of procedure.

CASE OF ELEPHANTIASIS IN A CALF.

By the Same.

The following brief description, together with the subjoined woodcut, has reference to a singular condition of the skin of a calf, sent to this institution by Mr. J. Wallin, jun., Student, accompanied by the following letter:

Theale; *March*, 1865.

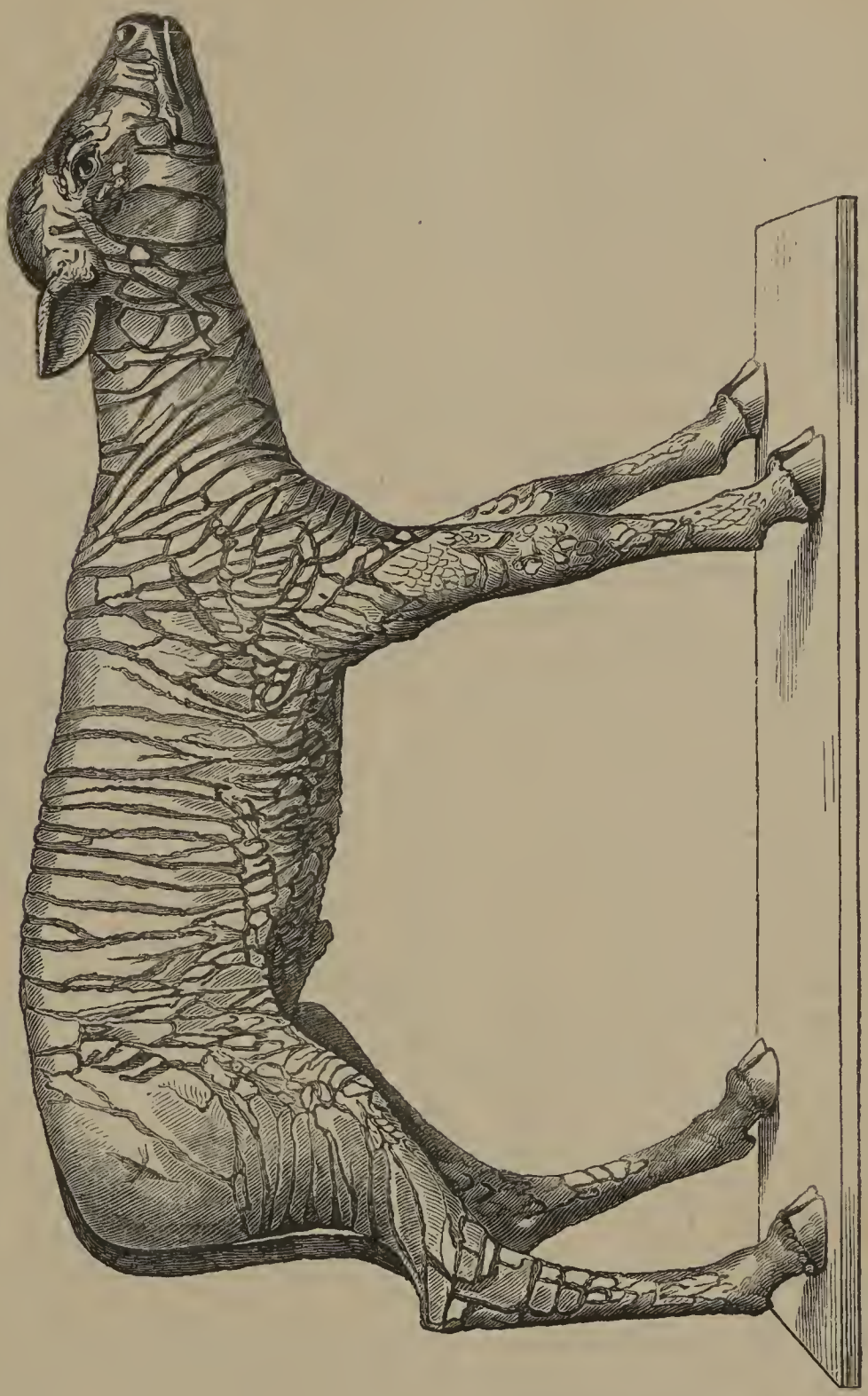
Sir,—The calf I send for your inspection was taken by me from a heifer about a year and a half old, the property of Mr. Tew, of Aldermaston, Berks. The animal showed signs of parturition, and, assistance being thought necessary, I was sent for. The calf was taken away alive, and without any very great difficulty. It lived only a few minutes. Considering it to be a curious specimen, I determined to send it to you for your opinion; and should you think the case worth a place in the *Veterinarian*, I should be pleased to see it inserted.

I am, Sir,
Yours respectfully,
John Wallin, Jun.,
Student.

To Professor Varnell.

I am not sure that it would be correct to designate the peculiar condition of skin of this calf as pure elephantiasis; nevertheless, for the present, I shall adopt the term, leaving it for future investigation and consideration to determine whether it should be retained or not.

I am also not aware that a similar case has ever been recorded as having occurred in this country, and I am informed that the museums of the Continental veterinary schools do



not possess more than one or two specimens. We are, therefore, the more indebted to Mr. Wallin for so valuable, because so rare, a donation wherewith to enrich the museum of the Royal Veterinary College.

The calf was fully developed and perfect in form, with the

exception of the skin, the abnormal character of which is faithfully represented by the above woodcut, drawn and engraved by Mr. Robert Utting, of Camden Road, Camden Town, from a photograph of the animal. The condition of skin is, of course, congenital, but what force induced it must remain a mystery. There is no evidence whatever of any hereditary tendency to produce such an unusual state of the common integument, and we cannot suppose that any of the calf's predecessors were affected in a similar way.

Had the skin been in a normal condition the calf would have been a dark red colour, for such is the colour of the hair wherever it exists in fair quantity, as on the legs up to the knees and hocks, and under the belly and throat. The outer covering of the skin may be compared to a sheet of thick parchment spread over the whole of the body; but what peculiar process was going on, and at what period of utero-gestation this singular and abnormal condition of the *epidermis* took place, it would be difficult to say. To give the reader an idea of its probable origin, I would suggest the following hypothesis. Let us suppose that, at a certain period of fœtal development—for instance, when the hair first made its appearance on the surface of the skin—from an undue and abnormal secretion, the epidermis became unusually thick and of a semi-gelatinous consistence—which I conceive to be possible—but that suddenly an alteration both in its quantity and quality occurred, by which a distinct separation of the outer abnormally developed epidermis from the dermis took place. If we now suppose that as the hair increased in length it carried with it the outer layer, which, by being removed from the influence of the moist secretion of the dermis, became gradually hard and tough, resembling half-dissolved gutta percha in consistence, we can see an apparent cause of the change. As the fœtus continued to increase in size, its investing and hardened epidermoid covering would not equally increase, but rather, I should think, would shrink by becoming denser, the consequence of which would be that the latter would crack in many places, as a result of the gradually developing force within. The cause, however, of the regularity of the fissures (for they are symmetrical on both sides of the calf) is very difficult to determine. The furrows are covered with longish hair, while that which is on the horn-like ridges is short and rough.

"CANKER:" CAN INVETERATE CASES BE CURED?

By Thomas Greaves, M.R.C.V.S., Manchester.

The subject now before us, perhaps, is one of the most interesting questions in connection with our profession. It appears that from time immemorial this disease has to a great extent defied the utmost skill, whilst science seemed altogether unavailing in her attempts to subdue it. The untractable nature of the disease, in fact, is such that most men would gladly avoid the treatment of a case, and they hesitate to bring the subject before us for consideration.

Canker has from time to time been a disease to which I have given a great amount of attention, and it has been one, I candidly admit, which has in almost every instance baffled my best efforts. I am of opinion that canker in nearly every instance is the result of injuries assuming unhealthy action. I have met with numbers of cases during the last thirty years. In some of them the disease was confined to the laminæ; in others, to the sole and frog; and in others, again, both sole and laminæ have been affected. I have had them under treatment for all periods, from two months up to three years. Some of the cases I have dressed daily; others every other day, or every third or sixth day, as the parts appeared to demand it; employing nitric acid, hydrochloric acid, chloride of zinc, burnt alum, sulphate of copper, &c., &c., with dry tow, and pressure, always taking care to keep the foot dry; but, as the sequel proved in almost every case, with the like result in the end. I know no disease that is so flattering, so deceptive, and, at the same time, so insidious as canker. I have spared neither trouble nor expense to overcome it; in some cases dressing the parts every day, without a single omission, for three months together; occasionally spending an hour at a time with the foot, for, having always had a forge, and some portion of my life four forges, I have been in the constant practice of using my searcher, and the plan I have always been in the habit of adopting has been to exercise scrupulous care in removing every particle of detached horn without cutting the quick, and to thin the surrounding horn of the hoof or the sole, as the case may be, to the thinnest possible feather edge, then to wipe clean the diseased surface gently, and apply my dressing with great care, making the pressure as

equable as possible. But I have nearly always found that, however careful I had been in removing the very least fibre of detached horn, when I came to examine the foot again I found it had become further separated at the edges to the extent of, perhaps, one eighth or one fourth of an inch. This appeared to me to be a proof that, although not detached, these tissues were, nevertheless, actually affected, and in a diseased state, when I dressed the foot the last time; or else the virus from the diseased surface, coming into contact with the fresh-exposed tissues, acts upon them as an irritant, infects them, and causes an extension of the separation. Well, we go on paring off this fresh-detached horn again and again, and yet again, and applying our dressing, until at length we get tired out and send our patient to the tan-yard. In two cases I cast my patient and scraped the coffin-bone, but it was in vain. In one case of canker, that occurred fifteen years ago, I inserted five ring-rowels in the thigh, and had a seton encircling the coronet of the same foot, and all discharging profusely at the same time, for three or four weeks. My object was to eliminate the disease from the system, to withdraw or abstract the fluid in the leg—in other words, not, perhaps, very scientific, neverthless expressive, to tap the leg, and thus cut off the supply of the secretion from the foot; but this plan had no effect whatever upon the disease. Neither could I ever arrest the disease by any internal remedies. About two years since, I had a consultation with Mr. Lawson, on a case belonging to the Salford Railway Company. The disease was in the frog, and about one inch under the sole on each side of the frog, of the near fore foot. I had this case under treatment during six months, when Mr. Lawson proposed, as a *dernier ressort*, the French operation of tearing out the sole bodily. The plan was not urged by Mr. Lawson, as he had not then ever seen it done, but his son, who had spent two sessions at Alfort College, had both seen it done and had frequently done it himself there, and he extolled it as a cure for canker. I could not, however, give my consent to this plan; the experience of a whole life revolted at what appeared to be an operation attended with gross cruelty, and so strong was my prejudice that I would be no party to it. The result was the horse was sold for £6. He had cost £56 only eleven months before. The person who purchased him said he could cure him. I have since learned that, after treating him for eighteen months, layers of the under surface of the coffin-bone exfoliated, and he was destroyed. I have since been convinced, and feel no hesitation in saying, that if he had

been operated upon he would have been cured. The conclusion I had arrived at then was that *cases of inveterate canker could not be cured;* but since then I have been convinced that that conclusion was a fallacy. Soon after this I was invited to see a case of canker under treatment at Mr. Lawson's. It was a gray Surrey horse, belonging to Messrs. Kenworthy, &c., carriers, of Manchester. The disease was situated in the laminæ and sole of the hind foot, and had been under hand twelve months or more, when, there being no prospect of recovery, Mr. Lawson, jun., operated upon it, and, in a few weeks after, firm solid horn covered the diseased surface. The horse went to work, and has continued to work upon Manchester pavement ever since, without the slightest reappearance of canker. Since that case I have seen a gray horse which was operated upon by the same gentleman. This animal was affected in the frog and sole of the fore foot, and had been so for four or five months. This case, too, recovered entirely in a few weeks. Mr. Lawson also operated upon a case for me, belonging to the Salford Railway Company—a chesnut horse, called "Samson." The disease in this instance was in the laminæ of the hind foot, and had existed about twelve months. It was considered a hopeless case, but it recovered perfectly, and the horse has been working at shunting regularly for the last twelve or fourteen months without a sign of the reappearance of canker. A bay horse, "Turpin," belonging to the same railway, was also operated upon in the same way. The disease was in the frog and sole of the fore foot. This case likewise recovered, and has been at work constantly for the last eight or nine months. Since then I operated upon an iron-gray horse, "Traveller," belonging to the London and North-Western Railway, Liverpool Road Stables, Manchester, now working at New Mills, Derbyshire. I operated on the 23rd of May. The disease was in both hind frogs and soles, had existed six or eight months, and the horse had become so lame that he could not work, and, indeed, could scarcely be made to turn over in his stall, standing entirely upon his toes. On the 19th of June he could trot sound, and on June 27th he went to work, being thirty-three days after the operation, and he has continued at work ever since, being quite well. Another case, a gray boat-mare, belonging to Mr. Mark Cooper, No. 22, Russell Street, Hulme, was affected with canker in the off hind foot. It had been bad for six months. I operated on the 8th of June. She went to work on the 23rd July, and has continued to work ever since, being perfectly cured. Another case, making the

seventh and last case I shall speak of, was a brown horse, "Rodney," belonging to the Salford Railway Company. This was a very bad case, the disease existing in the laminæ of the hind foot. The leg was also affected with "grease," and there was much tumefaction of the coronary substance. The horse had been bad twelve months or more, and was very lame. Having stated the particulars of the case to Mr. Lawson and his son, they at once consented to join me in any loss that might be incurred. They operated upon him on the 23rd of June, and I have great satisfaction in being able to report that, so far as the canker is concerned, the progress made is everything we can wish for, and I entertain no doubt whatever in my mind the disease will be entirely and perfectly cured. This case has since got well, and thus we have accomplished our object. I feel myself bound to say, to the honour of Mr. Lawson, that he does not shirk incurring the risk of even a certain loss in an experiment, if he can only benefit his profession thereby.

I have now given seven cases that have been operated upon—cases in which all other means had failed; six of them have been radically and perfectly cured, and the animals are still in existence; the seventh is also now cured. It appears, therefore, that a cure can be accomplished after the operation by the same application and attention being paid which were utterly in vain before the operation; that the tendency to spread has entirely ceased; and this is one of the grand features in the treatment. It seems that the *tearing* off of the sole or hoof has a very different effect to *cutting* it off, which shaves off the tops of the sensitive villi, leaving some of the cut and poisonous roots still in, as if the forcible tearing out the folliculi or villi by the roots creates a revulsion, and changes completely the nature and disposition of the surfaces, so that the strong tendency to canker seems no longer to exist. But let us not deceive ourselves; the operation must be done properly, and even after the operation is performed the case will require great care and attention. Proper dressings must be properly applied, consisting of Egyptiacum, nitric or hydrochloric acid, phenyline, solution of alum, sulphate of copper, &c., &c., with dry tow, &c., as occasion requires. *Thus treated, I have not seen one case fail.* I must ascribe to veterinary medical associations the emulation which has arisen in our profession, and it is to one member especially that our best thanks are due for the advocacy of an operation which has resulted in a cure for canker, even in inveterate cases, and the name of that gentleman is John Lawson, jun.

INSPECTORS OF CATTLE, THEIR DUTIES AND LIABILITIES; AND VETERINARY *VERSUS* HUMAN PRACTITIONERS.

By R. H. Dyer, M.R.C.V.S., Torquay.

The year 1865, about to close, may be considered as one of the most eventful of modern times. A great war has terminated; thousands of brute beasts have perished from plague and pestilence; and, lastly, one of the greatest statesmen that ever lived has gone to his fathers. "Requiescat in pace."

My paper is headed "Inspectors of Cattle, their Duties and Liabilities." We all know of the great pest, "the cattle plague," which has occupied our minds for some months past. We are also aware of the many different opinions that have been expressed as to its birthplace, and how, when, and where, it made its first appearance in this country. We are in possession of information as to the steps taken by Government with a view of suppressing the disease, or, as it has been quaintly said, "stamping it out."

Without offering any comments as to its being a highly contagious and an imported disease as well, I will direct myself more particularly, in the first place, to the question with which we started. If all Dr. Thudichum has asserted in his report, which was printed by order of the Privy Council, be correct, then well may we ask, what are the duties of Inspectors? It would occupy too much space in your widely circulated Journal to take up his directions *seriatim*; sufficient can be gleaned from No. 5, Article I, headed, "Principles of Disinfection."

It follows from the above that all articles which have been in contact with a diseased animal, or any of its discharges, particularly its fæces, are capable of carrying the infection for an indefinite time—mark, an *indefinite* time—and must be looked upon as being actually infectious to other healthy animals. This piece of information is highly important. Again, in speaking of the safety dress, the doctor states, "This consists of strong water-boots reaching up to the knees, well greased all over; of a waterproof coat, buttoned close all the way up in front, and closing tightly round the neck and wrists. The head is to be covered with a cap, which takes the hair well in." He goes on to say that every person having occasion to visit places where diseased

cattle are, should be provided with this dress, and taken off and disinfected when leaving the place, &c. It will here be seen what the duty of an Inspector is, so far as his personal attire is concerned. I presume this order has not been carried out in many instances. If the disease is of that contagious character it has been described, it is *marvellous* that so few localities have been infected. The duty of Inspectors in relation to examination of cattle appears to be a very onerous one. From all I can glean, some of these officers are rather too hurried in giving their fiat. I have more than once been informed of the errors that such and such a one has made. As I was leaving a market this morning I was asked by a farmer if I had heard of a certain case. My reply was in the negative. He said that the owner of a cow told him a few days ago that an inspector ordered one to be slaughtered and buried, under pain of being fined the sum of £20. The owner objected—refused. The day after, the cow calved, and both animals are doing well. If this be true, it only proves there must have been something singular about the beast. If untrue, the sooner these reports are corrected the better. I am inclined to think there is too much hurry in ordering the *pole-axe*. It is a hard law, when one animal has become diseased, for others not yet diseased to be destroyed too. I hope this law is not now carried out. We have a difficult game to play, and the more cautious it is done, the wiser it will appear to parties most interested.

As it is not in my power to say any thing in reference to the disease being an imported one, I may be pardoned if I direct attention to one or two particulars with reference to what has been taking place within the past twenty years. It must be remembered that everything almost has undergone a revolution during this period. Change of seasons, and the use of artificial and other manures, are amongst those of most importance. If the seasons are really changed, the atmosphere has undergone some chemical change also, there can be but little doubt. What those chemical alterations are, but few persons have an opportunity of detecting. But, surely these two things alone must play a very important part in the growth of our food-producing animals. Is it not agreed on all hands that the young animals which are slaughtered and used as food for human beings have become wonderfully matured in comparison to what took place under the old system? Every breeder of shorthorns, sheep, and pigs, knows how soon he can bring the youthful animal to market, or to the cattle shows, nowadays. He could not have done so without the assistance of guano and the superphosphates.

My belief is that much remains to be learned. Has any person yet discovered the cause of the potato blight, and has a remedy been found for it? My table gives daily proof that no effectual remedy has been found; or, if found, it is not applied. Has any man found out where the turnip fly comes from? Does this insect wander about in search of what it may devour? What has produced so much and fatal disease in swine during the past season? If I am rightly informed, the disease which has carried off so many thousands of pigs, is very analogous to that termed "plague;" in short, there has been a greater "plague" or mortality in swine than in cattle. If these animals had been of a higher money value, we should have heard more about them. With truth it may be asserted, that thousands of sheep and lambs have died this season, and calves also, from that troublesome complaint, hoose, attended with diarrhœa and worms in the bronchi and large intestines. What of influenza in horses? Hundreds have died of this disease this year. What is the cause of this? Surely there *must* be a cause for all these things. It appears to me that much valuable time is lost in endeavouring to learn where such and such a thing comes from. When a house is on fire, the fireman scarcely ever asks "How did this happen?" but he sets to work in right good earnest, and tries to "stamp it out" or, in other, and perhaps more appropriate words, to extinguish it. I have often had occasion to remind members of the medical profession that much time is wasted in these inquiries. In the year 1849, when the cholera was raging in London, a meeting of the members of the medical profession was held to inquire as to its contagious or non-contagious nature. Many gentlemen spoke in favour of and many against contagion. An eminent member of that profession was present, and remained silent, much to the surprise of every one. As the meeting was about to be dissolved he rose and spoke in these words, as near as I can remember—"When I entered this room I knew but little of this disease, in reference to its contagious properties, and I know no more now." This expression, from such a man as he was, became indelibly fixed upon my mind.

The causes of epidemics, it has been observed by an eminent writer, are nearly all referable to some peculiarity in the state of the atmosphere. The same may be with equal truth said of epizootics. Variations in temperature, a foul and vitiated air, humidity, &c. "There are such things as dry fogs, which consist of substances partially suspended and partially dissolved in the atmosphere; be their nature what they may, they have been known to spread over large districts as a haze. In the

years 1782-3, it is written, a remarkable haze of this kind extended over all Europe; seen in mass, it was of a pale blue colour. It was thickest at noon; when the sun was seen through it it appeared of a red colour. It was not affected by rain, and it was said to have been possessed of drying properties, and to have occasionally yielded a strong and peculiar odour. Earthquakes about this time were known to have taken place at Calabria and in Iceland. Eruptions also occurred. It was supposed these earthquakes and eruptions were connected with the haze. The dispersion of this haze, in the summer of 1783, was accompanied by severe *thunder-storms*. As might be expected, the general state of health of both man and animals has, for the most part, been deranged during the continuance of these phenomena, for *simultaneously* epidemic diseases of various kinds have broken out. The nature of the matter so diffused through the atmosphere is not well known." Berzelius has made the following statement. In speaking of the effects of gases, he says, "In the first experiments which I made on the inhalation of selenium in combination with hydrogen I conceive that I let into my nostrils a bubble of gas the size of a pea. It deprived me so completely of the sense of smell that I could apply a bottle of concentrated ammonia to my nose without perceiving any odour. After five or six hours I began to recover a sense of smell; but a severe catarrh remained for about fifteen days." . . . . . Dr. Prout says, in reference to cholera, "I have been occupied some years in making investigations regarding the atmosphere, and for more than six weeks previously to the appearance of cholera in London had almost every day been engaged in endeavouring to determine with the utmost possible accuracy the weight of a certain given quantity of air, under precisely the same circumstances of temperature and pressure. On a particular day, the 9th February, 1832, the weight of the air suddenly appeared to rise above the usual standard. As the rise was at the time supposed to be the result of some accidental error, or of some derangement in the apparatus employed, in order to discover its cause the succeeding observations were made with the utmost rigid scrutiny, but no error or derangement could be found. . . ." Professor Daniell was of opinion that the fatal fever of Africa was occasioned by sulphuretted hydrogen. Schonbein attributed influenza to ozone. "It has been remarked by many contagionists that the year 1866 will prove a most disastrous one as regards the cattle plague. How is this? It has the semblance of inconsistency in its very foundation. If the disease has been imported, say, in the months

of June and July, and all those animals so imported, with others, have died, or have been slaughtered, and every precaution taken to disinfect every thing which has been in contact with infected animals, added to which we have been favoured with sufficient rain to wash away every substance of an obnoxious description, I ask, how is this? One would be inclined to the belief that, if the disease referred to is what some pathologists have determined, we may be looking forward to its subsidence for ever after the winter rains and frosts have passed over it. The experiences of a hundred years all tend to lead one to believe that when any epidemic or epizootic has *once* shown itself, in any locality, that it is likely to be met with there at some subsequent period. I cannot view these opinions as regards the plague showing itself next year with redoubled fury in any other light than that of damaging to contagionists. Time will reveal this."

From these observations it will be surmised that I am no great believer in the contagion theory. Willingly do I admit that the disease is infectious and contagious, but I am not prepared to admit that its infectious or contagious properties are a tithe part of what has been generally represented. Some startling facts have been made known, I am aware. Many circumstances have occurred to warrant the sceptic in receiving much as mere *hypothesis*. For the sake of argument we will believe all that has been said in reference to the theory of contagion. We must now seriously consider (after having read a little about the duties of inspectors) what are his liabilities. If an inspector visits an animal suffering from the disease, and does not perform his duties with regard to his dress, and does not disinfect his clothes upon leaving, he is morally responsible for every new case which occurs in his rounds, unless sufficient and satisfactory reasons are given for its outbreak. Were I in the position many are supposed to be, I should view this question with much concern. Every time the hall-door-bell rang, it would cause me to imagine it a precursor to some action at law!

A few words as to what the medical profession have been doing will not be without profit just at this moment. You are doubtless fully alive to the outbursts of language heaped upon us, as a profession, by some of the "thunderers." Some writers have gone so far as to assert that we know nothing! This gratuitous piece of information is worth what the ink costs which marked the words. The public are the best judges. Writers for the press, as a rule, are not well schooled in these matters. Comparisons are said to be

odious. For this once, however, I must be permitted to make one or two, not with a feeling of anger or resentment, because the ill-natured remarks which have appeared from time to time are not applicable to myself personally; nevertheless, I feel that I am one of the abused. The veterinary profession has been snubbed as one of little worth. Why? Because the members of that body have not been successful in stating every particular in reference to "cattle plague;" its home; when imported into this country, and through what channel or port; and because, moreover, they have not found a cure for it. This is, I think, the charge which has been brought against the members of our body. Is this the *only* malady that remains without a means of cure? What say they of glanders? What of pleuro-pneumonia? What of inflammatory fever in young stock, &c.? There is no disgrace in our not having found a specific for these diseases. The members of the human profession have certainly taken a very active part in this affair from the first; still, with their able assistance, but very little good has been effected.

In the *Farmer's Gazette*, published in Dublin, may be seen a letter from an M.D. (Dr. Taylor), dated a few days since, speaking of "the new disease in cattle." It appears by this, and other communications furnished by newspaper correspondents, that new diseases are springing up in various directions. This gentleman asserts that he has been much occupied of late in treating his cattle. He describes the symptoms and treatment for the same, and gives as a reason for so singular a complaint the "arid state of the atmosphere," &c. He also tells us that he has made known these cases to a certificated apothecary, and declares he has communicated the treatment to neighbours, and all have brought their cases to a successful issue. A V.S. standing high in the profession has complimented the doctor in a letter which appears in the same paper (immediately under the doctor's letter), by way of a *testimonial*. Really, these are strange times! We may exclaim with the poet, "O tempore! O mores!"

A laughable correspondence has been going on, in the same print, as to some opinions expressed by a V.S. who read a paper, or delivered a lecture, upon the "new disease." This gentleman believed the "new disease" was produced by *flies*, which were seen to attack the legs. The editor of the periodical before mentioned wished to know how it was the flies selected the *front* legs, and not the hindermost? His correspondent very quaintly writes the following—"Thereby hangs a *tail*," giving the tail as the reason why flies are not found on

the hind legs; in fact, he declares the tail whips them all away! It is to be regretted that newspapers contain so much nonsense as we read in some of them.

After what has been written with respect to the veterinary profession, we may consider for a moment how matters stand with regard to human medicine. It is always more or less profitable to compare one perfect object with another supposed to be complete; and it may, in the same wise, be well to put into comparison that which is full of imperfections with others which are believed perfect.

It will be readily understood that the veterinary profession is the imperfect, or incomplete system alluded to, and the perfect or complete one refers to the medical profession. We have admitted that there are many diseases in our patients which are at the present moment considered beyond our reach; so far, we shall take credit for being honest. Let us see if the human practitioner has to contend with any diseases beyond his reach. Is pulmonary consumption a curable disease? I think not. What can be said in reference to gout, rheumatism, apoplexy, epilepsy, dropsy, the various nervous affections, hydrophobia, tetanus, and trismus, malignant typhus, diphtheria, and cholera? There are others, if I could remember them at the moment. Is any branch of the medical profession to be considered perfect with such a catalogue of incurable diseases as this? I answer, certainly not.

The maligners of our body cannot be aware of all these truths. They have not taken this fact into consideration, viz., that most diseases in our patients run their course more speedily than diseases in man are known to do. And very properly it is so. Suppose a young man or woman is attacked with pulmonary consumption; no expense, no care and attention are spared to relieve his or her wants. A patient, if rich, or one whose parents are wealthy, often expends hundreds, and, in some cases, thousands of pounds, in endeavouring to relieve his or her anguish, although perfectly sure that in a short space of time the disease will get the upper hand, or, in other words, the patient must soon die. How is this explained? The laws of God *demand* that such shall be so, and the laws of humanity declare the same. So long as a patient lives, we are bound by every tie to endeavour to soothe his anguish. Now, when one of *our* patients requires the assistance of a surgeon, he (the surgeon) is expected, in a word, to state what the disease is, and say if it be curable, and if so, how long will it take to do it, what the expense will be, and so on. It is not at all times an easy matter to solve these questions in a moment. I wonder

what a physician would think, if a similar number of queries were put to him upon his entrance to the bedchamber of his patient. He would wish himself afar off. Yet such is often what the veterinary surgeon meets with. If he cannot offer some very satisfactory account of what the result of his practice is likely to be, or if he honestly declares his inability to cure the disease under which his patient labours, in all probability the knife or the pole-axe will be suggested by the owner. I am convinced that many cures could be effected if money were less thought of. Money, or as it has been said, "pounds, shillings, and pence," are the "alpha and omega" of our profession.

It will be considered supererogatory to bring forward any further remarks in proof of the differences which exist in the practice of the members of the two professions. Doubtless, the great Architect of the universe ordained and intended that some diseases in the domesticated animals should speedily terminate. There are obvious reasons why this should be so. In conclusion, it has been asked why other members of the veterinary profession are not on the Royal commission? One would imagine there are men in and about the metropolis, who could render greater service than some whose names appear on the list.

As to the steps taken by Government to suppress the rinderpest, many opinions have been expressed from time to time. The change which has taken place in the weather has been a God-send to those whose herds were supposed to be in danger. The weather has, no doubt, at this juncture, played a very prominent part in staying the ravages of the "plague;" nevertheless, it still exists, and may do so for some time to come.

THE PROPOSED NEW VETERINARY MEDICAL BILL.

By T. D. Gregory, M.R.C.V.S., Bideford.

Gentlemen,—By the post of to-day I presume every member of the Royal College of Veterinary Surgeons in Great Britain and Ireland has received a circular containing the form of a proposed new Veterinary Medical Bill, to be introduced before Parliament in the next session; and we are asked by the Council, who are the framers of this bill, to exert such personal influence as we can command, either

with peers or members of Parliament, to ensure support when the said bill is brought before the house.

The desirability of some bill being so introduced, perhaps few will venture to deny; but there is one clause in the present proposed one so extremely objectionable (at least in my opinion) that if it is allowed to remain, not only shall I refrain from exercising any influence in its favour, but shall deem it a duty I owe to the profession to assist in opposing it by every means in my power.

The framers of this bill, I am convinced, can have but little knowledge of the effect the fourth clause would have upon the *status* of the present generation of veterinary surgeons practising in country districts, if they expect such members to be favorable to it.

In almost every small town and large village there exist persons who, in addition to their other occupations, such as blacksmiths, small farmers, little shopkeepers, perhaps even colt-breakers and stable-keepers, dub themselves veterinary surgeons; yet they possess no other qualification than that which is supplied them by their own audacity and ignorance; nevertheless, we are called upon to ask Parliament to pass a bill to admit such persons within the portals of the profession; to be recognised by us in courts of law; to be placed, in every way, upon the same footing as ourselves, and to receive the hand of professional fellowship from us. Can anything be more degrading? Moreover, how do we know what others we may be called upon to admit during this year of grace? Better, far better, to allow matters to remain as they are than commit such a grievous wrong upon ourselves and the country as this.

There are, I admit, many persons practising veterinary medicine without diplomas who are respectable men, and in many instances they are competent to practise, and whom it would be, perhaps, hardly fair to attempt to put down by penalty; but there is a way out of that difficulty, which is this—insert a clause whereby any person now practising may become a member of the body corporate on presenting himself at any time, during this year of grace, before the examining board of the College, and pass such a *practical* examination as it might be deemed necessary; also, on his admission, to pay a small fee. Few, I presume, who have any wish to become members would object to such a course as this, nor would Parliament, provided it is inclined to do us justice. Unless some such clause be substituted for the one alluded to I shall feel bound, as I before said (and I am convinced I shall

be joined by large numbers of country practitioners), to place every obstacle in the way of such a bill becoming law.

I trust you will afford me space for the insertion of this note. It is not often I trouble either you or the profession with any remarks, but I feel the importance of this subject, and think it right that each of us should, in some way, express his opinion upon it, as fearlessly and as candidly as I have endeavoured to do.

Yours faithfully.

To the Editors of 'The Veterinarian.'

VALUE OF DISINFECTANTS IN RINDERPEST.

A Letter from W. Herapath, Sen., Professor of Chemistry.

Old Park, Bristol; *Oct. 26th*, 1865.

Sirs,—Recent cases have proved that the poison of rinderpest is of a volatile nature, and capable of being condensed upon the dress and persons of those who visit or attend upon the diseased animals; and thus it is probable that veterinary inspectors and veterinary surgeons will very frequently be the means of conveying the infection from one herd to another. I recommend that they should provide themselves with a mixture of three parts of common salt and one part of black oxide of manganese, finely powdered and well mixed. This can be carried with them in a bottle; and always, after visiting a diseased animal, they should put a little in a plate or saucer, and pour from ten to twenty drops of oil of vitriol upon it, when chlorine gas will be instantly liberated. If they now pass the plate two or three times round them they will be rendered innocuous. *No infection can exist where chlorine can be smelt.*

Yours respectfully.

To the Editors of 'The Veterinarian.'

A SHORT ACCOUNT OF THE PROCEEDINGS OF THE INTERNATIONAL VETERINARY CONGRESS LATELY HELD AT VIENNA.

By W. Ernes, M.R.C.V.S., London (one of the Delegates).

The first meeting of the second International Veterinary Congress took place on the 21st of August, 1865, at 10 a.m., in the splendid saloon of the Academy of Science, at Vienna, which had been placed at the disposal of the Congress.

Dr. Höll, Director of the Veterinary Institute of Vienna, opened the meeting in an appropriate speech, and at its close introduced the imperial councillors Drs. Well and Pabts, who attended to welcome the members on the part of the ministers of state, of commerce, and of agriculture.

Dr. Röll then announced the names of the committee who had undertaken to organize the Congress, and also the programme of the four points on which it would have to decide, and to which its business would be limited.

Dr. Van Helm having welcomed the meeting on behalf of the municipal authorities of the town of Vienna, in an appropriate speech, it was proposed by Dr. Hertwig, Professor of the Berlin Veterinary School, that Dr. Röll be elected President, and Dr. Hering, Professor of the Veterinary School of Stuttgart, Vice-President; which proposition was carried unanimously. It was also decided that a subscription of three florins per member should be entered into to defray the expenses of printing, &c.

The further proposition of the president to elect committees for preparing the four propositions in the programme, was, after a short debate, agreed to.

The names for the committee on the first point were Professor Unterberger, Dorpat, Russia; Professor Seifman, Warsaw, Poland; Professor Zlamal, Pesth, Hungary; Professor Hertwig, Berlin; Professor Röll, Vienna; Dr. Hanbuer, Dresden, and M. Werner, District Veterinary Surgeon, Jena.

For the second point, Professors Müller, Vienna; Zaugger, Zurich; Ravitsch, St. Petersburg; Reynal, Alfort; and Perasino, Turin.

For the third point, Dr. Pillwax, Vienna; Professor Fuchs, Baden; Professor Jessen, Dorpat, Russia; Professor Husson, Belgium; Sandermann, District Veterinary Surgeon, Bavaria.

For the fourth point, Professors Hering, Stuttgart; Ger-

lach, Hanover; MM. Adam, Police Veterinary Surgeon, Augustburg; Bleiweis, Laybach, Austria; Ernes, London.

The meeting adjourned at 12.40 to Tuesday 22nd, 9 a.m.

Above 160 members of the Congress were present, besides visitors. Every country, with very few exceptions, was represented; Portugal, Rome, Constantinople, Wallachia, Italy, Sweden, Denmark, had their delegates; Austria, Bavaria, Prussia, Russia, Würtemburg, and Saxony, had the greatest number. The official delegates from England were Professor Spooner, for the Royal Veterinary College; Colonel Wilkinson, Principal Veterinary Surgeon for the Army; Professor Simonds and Mr. Ernes were appointed for the Royal Agricultural Society, but, on account of the cattle plague showing itself in England, Professor Simonds was unable to leave the country. Mr. William Field, jun., also attended the Congress. The debates were restricted to the German and French languages.

The second meeting of the Congress took place on the 22nd of August; the President, Dr. Röll, took the chair at 9.20 a.m.

The report of the first committee was the order of the day. The committee recommended a quarantine of ten days instead of twenty-one, as heretofore, against the rinderpest; that this quarantine should be established at convenient places on the frontiers where the commerce in cattle required it; that the animals should be accessible to a plentiful supply of water, and well provided with forage, and have efficient veterinary surgeons as inspectors. The day that cattle entered the quarantine and the day they went out were not to be included in the ten days. The arguments in favour of the ten days were, that twenty-one days stopped commerce in cattle between Russia and the Danubian Principalities with the western countries altogether; it also led to animals being smuggled over the frontiers, which had often been the cause of the introduction of the rinderpest into Austria and Prussia; and that the longest period of the incubation known of the malady was nine days; that, therefore, a quarantine of ten days, which amounted at least to eleven days, would be amply sufficient. An animated discussion followed, but the resolution for ten days' quarantine between Russia and the Danubian Provinces on the one side, and Austria and Prussia on the other, was carried by a great majority.

There were other recommendations of the committee, such as the cattle being branded, a poll-tax on cattle of the eastern frontier, the farming of land on the western frontier, besides

the government fund, so as to pay the full value of the cattle, which would most effectually ensure the slaughter of the infected and suspected animals; also the disinfecting of the places of quarantine, &c. Some of these propositions were rejected as being useless, and some of them were adopted.

On the second part of the first point of the programme, the committee recommended that perfectly dried hides, horns, bones, dried and salted guts, melted tallow in vessels, cow-hair, pig-bristles, and wool in bags, should be admitted without being disinfected; that fresh horns, hoofs, melted tallow in bladders, fresh bones, should be disinfected with a concentrated solution of chloride of lime; and that fresh bones, hides, guts, raw flesh, sheepskins of every kind, when the rinderpest prevailed, should be prohibited.

The discussion was postponed to the next meeting, and the Congress adjourned at 12.20 p.m.

The next meeting of the Congress took place on the 23rd of August, 1865, at 9.15; President, Dr. Röll. The minutes of the previous meeting having been read and confirmed, the president intimated that all propositions which were not on the programme should be made in writing and handed to the president, and they might, if there was time, be considered by the present Congress; if not, they would take precedence at the next.

The debate was opened by a proposition of Halicki, for the purpose of recording a vote of thanks to the Imperial Grand Duchess Helena Palowna, of Russia, for the aid she had given to veterinary science in submitting her large and valuable stock of cattle to the experiment of inoculating them for the rinderpest. It appeared from the debate that these experiments had been anything but successful, and that the first inoculations were as severe in respect of the mortality as the pest itself, although it was averred that if it could be carried through several degrees, the mortality would be much less, but still there would be the danger of spreading the infection by inoculation. It was further stated that it would never answer except in Russia, where it might be a means of lessening the rinderpest, and thus prevent its spreading westward, if all the cattle could be inoculated in the steppes.

The vote was carried unanimously.

A similar proposition was made for Professor Jessen, who had been the suggestor and operator in these experiments, which was also carried.

The debate on the second part of the first point of the programme was then resumed, and that referring to dry

horns, hides, &c., was adopted. That referring to the disinfection of fresh horns, hoofs, hides, &c., was also adopted. It was, however, resolved that when these articles of commerce came directly from districts where the rinderpest prevailed they were to be prohibited.

Fresh bones, horns, hoofs, hides, &c., were, when sent from infected districts, prohibited. This proposition being adopted, the meeting passed to the consideration of the next point in the programme, viz., the cleansing and disinfecting of railway trucks, ships, and other conveyances for cattle. These should be well washed with boiling water and soap, and afterwards disinfected with a concentrated solution of chloride of lime, and be perfectly dried before they are used again; also that they should be all subjected to veterinary inspection.

Some discussion arose as to the best means of disinfecting. Professor Perasino advocated a solution of sulphate of iron, which had been used with advantage in disinfecting of water-closets. Professor Reynal said that some experiments made at the Veterinary School at Alfort with virulent matters, such as mucus from diseased mucous membranes, pus-matter of glanders and farcy, &c., showed that after being boiled or treated with boiling water they had lost the property of communicating these diseases, and were consequently innocuous. Professor Gerlach was for having the places covered with a coating of oil instead of washing them with hot water and soap. Some members were for cyanizing the bottom of the trucks, &c.; but the report of the committee was, after a long debate, adopted with but slight alterations. The meeting was adjourned at 1.30 p.m.

The fourth meeting took place on the 24th of August, 1865, at 9.20 a.m.; president, Dr. Röll. The minutes were read and adopted. After some discussion as to the termination of the meeting of the present Congress, the report of the third committee was read. It was to the purpose that an international law would be the surest means to prevent the outbreak and spreading of CANINE MADNESS. To effect this the committee recommended that there should be instituted in all the towns and villages of every country a dog conscription or census; that every dog should be known by a certain mark or brand, and there should be a dog-tax, which the committee considered one of the best means to diminish the number of dogs, more particularly if this tax were higher on female dogs. Care should be taken to prevent dogs, particularly female dogs, from running about

without their masters. The employment of the muzzle the committee deemed necessary only when cases of rabies had occurred; the length of time these muzzles should be applied to the dogs to be left to the discretion of the authorities. In countries where there is no existing law enforcing notice to be given in cases of infectious diseases, it should be enacted that, in cases of rabies or suspected rabies, notice should at once be given to the authorities, so that rabid dogs, or others which have been bitten by them, or who have been in contact with them, should be at once destroyed. Dogs suspected of rabies should be kept in security and under observation until the state of their health is ascertained. Should they become mad, they are to be destroyed. If a dog suspected of rabies be destroyed, or if he show any signs of having really been mad, all dogs bitten by him or having been in contact with him shall likewise be destroyed. It is understood that, in all cases, the means of disinfecting dog-kennels should be applied. In reference to a dog inspection, the majority of the members were in favour of it, as it would be one means of diminishing the number of dogs, by doing away with those which were savage and disposed to bite, also those who were affected with loathsome skin and other incurable diseases, and it would also give opportunities for instruction as to the hygiene of dogs and the first signs of rabies. If the suggestion of these measures should accomplish the object in view the committee thinks it necessary that they should be carried out with the assistance of competent veterinary surgeons, and that on the occasion of the census each proprietor should receive a printed paper containing instructions as to the means of preserving dogs in health, the signs of rabies, and the police measures necessary to prevent canine madness, and also the destroying of mad and suspected dogs.

The first question proposed by Dr. Pillmax, the reporter and chairman of the committee, was whether canine madness was really a special and independent disease, engendering a contagion and capable of being communicated by bite or inoculation to other animals or man, and not by any means tetanus, as some considered it to be. The meeting was unanimous on the point of its being a special disease.

Every proposition of the committee was, after some debate, adopted without alteration, except one, namely, that of the destroying of dogs which had been bitten, or otherwise been in contact with mad dogs, which was altered as follows:—That they should only be destroyed when it was ascertained that no person had been bitten by them; but, on the contrary,

if any person had been bitten by them they should be kept under close observation until the state of their health was satisfactorily established. The first paragraph was rejected, The meeting adjourned at 1.50 p.m.

The next meeting of the Congress took place on the 25th of August, 1865, at 9.30 a.m.

After reading and confirming of the minutes, the president, Dr. Röll, proposed the second part of the order of the day to be taken first, viz., that of fixing the place and time of meeting for the next Congress. This being agreed to, Professor Haubner proposed Zürich; Van Undritz, Dresden; Professor Gerlach, Berlin. On a division, there were eighty-nine votes for Zürich, thirty-two for Dresden, and twelve for Berlin; absent, twenty-four. The time of meeting to be in August, 1867, was carried by a large majority. Professor Zaugger announced, in an appropriate speech, his readiness to undertake the organization of the next Congress, after which the report of the fourth committee was read by Dr. Hering, the recommendations of which were as follow:—That the general warranty for all defects which cannot be detected by an ordinary observer, and which materially interfere with the general usefulness or lessen the value of the animal, stands first. That the time within the action for the resiliation of the bargain be limited to three months. That besides this general obligation, the warranty should extend for a limited time to those defects which at the time of the purchase might not be perceived or overlooked, to protect the purchaser, without injustice to the vendor—1st, for animals of the horse tribe; 2nd, the ox tribe; 3rd, sheep and goats; 4th, swine.

Horses.—Restiveness, five days' warranty; cribbing, seven days; glanders, fourteen days; suspicious glanders, fourteen days; farcy, fourteen days; broken wind or asthma, fourteen days; staggers, twenty-one days; epilepsy and vertigo, twenty-eight days; periodical ophthalmia, twenty-eight days.

Cattle.—Tubercles in the lungs, twenty-eight days; pleuro-pneumonia epizootica, forty-two days; rinderpest, seven days.

Sheep and Goats.—Variola, seven days; mange, fourteen days.

Swine.—Measles, fourteen days; trichina, fourteen days.

After these propositions had been separately considered and discussed, they were adopted with the following amend-

ments:—First, by M. Zwickel—That cataract be warranted for seven days. This was carried by a majority, but the distinction of green and gray cataract was rejected. The other amendment was by Professor Husson—That in cases of glanders, farcy, rinderpest, pleuro-pneumonia, variola, and mange, the purchaser should lose his right of recovery if it should be proved that the animals since their delivery had been in contact with others suffering from those diseases. This was carried by the majority.

The meeting adjourned at 2 p.m.

At the subsequent meetings, which took place on the 26th and 27th, an account was given by Professor Ravitsch of the Siberian plague which had so extensively prevailed in Russia. By this account it was clearly shown that this malady is the carbon of the French, the anthrax of the English. It is a carbuncular disease, most fatal in its consequences, and highly contagious both to man and animals.

Professor Jessen also made some statements as to the success or non-success of inoculation of the rinderpest in Russia, and was followed by Professor Perasino on the same subject.

The proposition made by Professor Reynal as to the infection of sheep and goats by the rinderpest, or the results of inoculation made to that effect, and also the answer to the question whether the rinderpest really originated in the steppes of Russia, was postponed to the next or third Congress, on which Professor Hertwig proposed, that the members of the Congress should express their wish that meanwhile the Russian Government, assisted by Professor Jessen, who had already done so much in respect to this subject, should institute an inquiry as to what part of the Russian steppes gave birth to the rinderpest. This proposition was carried.

Votes of thanks were given to the Imperial Austrian Government, the municipality of Vienna, and the general committee, for the assistance and services rendered to the Congress. After a short reply from Professor Müller on behalf of the general committee, Von Undritz proposed that a vote of thanks should also be accorded to those governments which had condescended to send delegates to the Congress. Carried.

With this the business of the second International Veterinary Congress terminated.

Whatever might be the fate of future congresses, that held at Vienna was a decided success. The *élite* of the veterinary profession were present, many of whom had obtained high rank in science, and who were not only members of scien-

tific bodies, but also councillors of state, and had the prefix of Excellence to their names.

The subjects laid before this Congress were more practical than scientific; but, notwithstanding, they were considered with great care and attention, and the business was conducted by the president and vice-president with much good order, no one being allowed to speak out of his turn, and all the speakers had to attend a tribune and to face the audience while addressing the meeting.

Facts and Observations.

Sale of Horseflesh in France.—The French Government, after long deliberation, has resolved to permit the sale of horseflesh as food. The sellers will be subject to the same regulations as the butchers, but a special slaughter-house will have to be provided.

A correspondent, referring to the above, says—

"The newspapers announce, as a curious piece of news, that a shop for the sale of horseflesh as food has just been opened in Paris by permission of the authorities. From this one would suppose that horsemeat has never figured on Christian tables here. Pleasant delusion! It has been known to frequenters of restaurants—and everybody goes to restaurants regularly or occasionally—for years. It is put down in the *carte* as beefsteaks and roast beef—or, as the French call and write them, *bifstecks* and *rosbif*—but comes from the carcass of the noblest quadruped employed in the service of man. It is rather tough, to be sure, and somewhat insipid; but it is quite as nourishing and wholesome as nine tenths of the real beef consumed in Paris."

Rinderpest among Cats.—A disease has been prevalent in Forres for several weeks among the feline species, which has cut them off in every direction. The animals appear to be disinclined for food for a day or two, then they have running of water at the mouth and nose, dull, bleared eyes, and great prostration of strength. They lounge about the hearth or in by-corners, and do not touch food of any kind for days. They generally die on the eighth or ninth day.—*Forres Gazette.*

Action of Phosphate of Lime.—The *Abeille Médicale* publishes a paper by M. Collas, a chemist, of Paris, in which

he shows that while the attention of scientific men has been chiefly turned to the subject of finding agents capable of preventing or suspending the putrefaction of animal substances, it may not be uninteresting to take up the contrary question, and endeavour to find out those agents that favour putrefaction. Gelatinous phosphate of lime, he informs us, is of this class, as the following experiments show:—Having made a solution of isinglass in distilled water, and strained it through a cloth, he poured it into two porcelain basins, one of which contained a small quantity of the gelatinous phosphate, while the other was empty. Both vessels, on cooling, were found to contain a jelly, the former an opaque and the other quite a transparent one. They were both put into a room, the temperature of which ranged between 10 deg. and 15 deg. Centigrade. At the end of thirty-six hours the isinglass containing phosphate of lime was in a state of putrefaction, emitting an intolerable stench, while the other continued for six whole days in a sound state. M. Collas has made similar experiments with beef and other kinds of butcher's meat, and obtained similar results. Examining the question theoretically, our author is of opinion that phosphate of lime, so extensively used for manure in agriculture, acts as a powerful stimulant of vegetation; that if the flesh of fish is much more corruptible than that of mammalia, it is because the former contains much phosphate of lime; but that, on the other hand, if a fish diet is recommended to patients on account of its being easy of digestion, it is on account of the same ingredient, and that therefore a small quantity of phosphate of lime added to butcher's meat would render it much more tender and easy of digestion.

Two French discoveries of merit have been recently recorded. One, which is authentic, enables copper-smelters to utilise their pestiferous smoke so perfectly that Mr. Vivian, head of the greatest firm in Swansea, says he shall be able to turn out 1000 tons of sulphuric acid per week, restoring incidentally many thousand acres of land to cultivation. The other, which is less authentic, is a new mode of tanning in turpentine, said to be so rapid that twelve hours will tan a skin at half the former cost.

Adjustment of the Eye for Vision.—Dr. Lawson, in the *Ophthalmic Review*, controverts the theory commonly received, that the crystalline lens is rendered more convex for near vision, and less so for distant vision, pointing to the absence of any anatomical evidence that such action can take

place, and disputing the conclusiveness of certain optical experiments from which it has been assumed. A careful examination of the eye of an emu convinced him that the ciliary muscle has no attachments to the ciliary process or to the lens, and he observed that the ciliary muscle was so placed that its contraction must alter the form of the cornea; and he argues that, if such a mode of focussing the eye is provided in the case of the emu, it is probably the same in man.

Nitro-glycerine.—This substance has been proposed by M. Nobell as a substitute for gunpowder for blasting purposes in mines, its strength being ten times greater than that substance, and more easy of appliance.

Pure Iron.—Stachlsmidt has obtained iron in a pure state, which, perhaps, few persons have seen, by reducing the nitride in a stream of hydrogen gas. He describes it as possessing a silver-white colour, and so soft that it may easily be cut with a knife.

Royal Agricultural Society.—The prize essays offered by the Royal Agricultural Society for 1866 are as follows:—£50 will be given for the best report on the farming of Leicestershire, and the same sum for the best report on the farming of Worcestershire; £25 for the best essay on town dairies; £20 for the best essay on mountain breeds of sheep; £20 for the best essay on "the leaves of plants, with reference to their power of resisting drought;" £15 for the best essay on the improvement of waste lands connected with mines; £15 for the best essay on "the use to a farmer of a magnifying glass or simple microscope;" and £10 will be given for the best essay on "any other" agricultural subject. The reports or essays must be sent in by the 1st of March next.

New Method of Salting Meat.—M. Pienkowski has, by experiment, demonstrated that meat salted with the acetate of soda, instead of common salt, is more easily dried, has an agreeable odour, and is more easily unsalted.

Catalytic Action.—According to Schönbein, catalytic power is very generally possessed by substances throughout the animal and vegetable kingdoms, but especially by potato-peel, lettuce, the root of dandelion, &c. So effective is the first-named, that if potato-peel be kept for ten or twelve hours with starch, in a temperature of 45° to 50° Cent., the starch will be all changed into sugar.

Colour of Phosphorus.—M. Blondlot considers the colour of phosphorus, when pure, is black. Having, by repeated distillations in a sand bath and a current of hydrogen, acted upon ordinary phosphorus, he found, when it had become perfectly pure, if cooled slowly at 42°, it was a whitish mass, but when it had fallen to 8° or 10° it suddenly changed to black. Black phosphorus becomes again colourless by fusion, but recovers its blackness if slowly cooled, and, sometimes, if suddenly. It is like common phosphorus, except that it is more stable, softer, and more flexible.

Function of Leaves.—M. Boussingault states that the decomposition of water by the leaves of plants is no longer an hypothesis. He has established the fact by the analysis of plants grown in an utterly sterile soil, under the influence of carbonic acid and water alone. He also states that a perfectly dry leaf loses the power of decomposing carbonic acid, and that power can never be restored, in which the vegetable cell offers a striking contrast to the animal cell, since dried infusoria are restored to vitality by moisture.

Poisoning by Carbonic Oxide.—It is stated that animals poisoned by this compound of carbon and oxygen have been restored to consciousness by long-continued artificial respiration, the gas being expired in the form of carbonic acid.

Iodide of Lead.—This compound has been discovered as a mineral in Chili, and is said to be of high commercial value. It contains 10 per cent. of lead, independently of the iodine.

Novel Motive Power.—Mr. G. Greaves, M.R.C.S., has suggested that the internal heat of the earth might be rendered available as a source of motive power. That temperature has been shown, at a depth of 4000 feet, to be at least 120° Fahr., in which, it is hardly necessary to say, human beings cannot live for any length of time, far less use any exertion; lower down it is hotter still. One mode of utilising this heat has been conceived to be "the direct production of steam power by bringing a supply of water from the surface in contact with the heated strata, by means of artesian borings or otherwise."

The Horse and Sheep of Turkestan.—Vambéry, in his Travels in Central Asia, says, "The horse is regarded by the Central Asiatic as his *alter ego*. Different races are met

with, possessing different qualities and excellences. The following classification deserves to be noted:

1. The Turkoman horse; and here a main distinction exists between the Tekke and Yomut breeds. The former, of which the favorite races are the Körogli and the Akhal, are distinguished by extraordinary height (sixteen to seventeen hands). They are slightly built, have handsome heads, majestic carriage, wonderful speed, but no bottom. The latter, those of the Yomuts, are smaller, finely formed, and unite speed with unparalleled endurance and strength. I have seen many horses of this description which had carried each his Turkoman rider, with a slave behind him in the saddle, at a constant rapid gallop for thirty hours. In general, the Turkoman horse is distinguished by a slender barrel, thin tail, handsome head and neck (it is a pity that the mane is cut off), and particularly fine and glossy coat; the latter quality is owing to its being kept covered, summer and winter, with several housings of felt. With respect to the value, a good Turkoman horse may be had at a price varying from one hundred to three hundred ducats, but never under thirty ducats.

2. The Ozbeg horse resembles the Yomut, but its form is more compact, and denotes more power; its neck short and thick, rather suited, like our hacks, for journeys than serviceable in war or olamans.

3. The Kasak horse, in a half-wild state, small, with long hair, thick head, and heavy feet. He is seldom fed by hand, but is accustomed to seek his own subsistence, summer and winter, in the pastures.

4. The Khokandi, sumpter, or cart-horse, is a cross between the Ozbeg and Kasak breeds, and is remarkable for its great strength.

Of these four races, the genuine Turkoman horses have only been exported to Persia, and the Ozbeg horses to Afghanistan and India.

The sheep is everywhere of the race with fat tails. The finest are met with in Bokhara. Its flesh is the best I have tasted in the East.

The Age of Iron.—It has been said that we live in an iron age. But iron is no more the symbol of war, of slavery, and of barbarity, but rather the emblem of industry, of fraternity, and of civilisation. With it we build iron-clads, railroads, and the printing-press. While the first of these, engines of war, are constructed by it, may the influence of the others supersede them, and become the harbingers of peace to the nations, adding to their industries, their commerce, and their liberties.

THE VETERINARIAN, DECEMBER 1, 1865.

Ne quid falsi dicere audeat, ne quid veri non audeat.—CICERO.

ADVANTAGES OF VETERINARY MEDICAL ASSOCIATIONS.

IN the present number we have the gratification of recording the proceedings of the first business meeting of the "*West of England Veterinary Medical Association*" since its formation at Plymouth; an account of which appeared in our pages. It was held in the Athenæum of the city of Exeter, on the 20th of October. We like to particularise the *places* of these meetings. They are page-marks in our history, and indicate progress, while, at the same time, they bring us as a profession more prominently before the public, and show its appreciation of us.

Having been elected an honorary member of the society, we felt it our duty, as well as pleasure, to be present, and, while gratified with much that took place, we do not hesitate to express both our surprise and regret at the fewness of the members in attendance. The weather, however, was cold and cheerless, and the long-continued rains may have deterred many from leaving their homes, the west of England being characterised by its humidity. Yet there were some present who came from far greater distances than would have been required of those residing in the county of Devon, or even the contiguous counties. A wide area is embraced by this society, and, as it is the intention of its council to hold quarterly meetings thereof in different places, we sincerely hope that, as they move from place to place, so they will increase in numbers and in strength. The schools are doing their duty,—howbeit they will yet be required to do more, since not to advance, nowadays, is relatively to retrogress,—now let the profession do theirs, by building upon the foundations that have been laid, and very much are they capable of effecting; in fact, the labours of the teacher are nothing worth without the co-operation of the taught. Personal influence or conduct is either for good

or ill, for weal or woe; and so is that of a community. Well has it been said, "In the web and woof of life the threads are marvellously intertwined; our slightest actions have indirect consequences of which we never dream, while our most deliberate efforts are often waste or futile." Yet, alike unable to control events, we should "not be weary in well-doing," for, as Milton has beautifully expressed it, "Lordship and victory are but the pages of truth, justice, and honour."

It was wise on the part of Mr. Bodington, in his paper read at the meeting to which we are adverting, and in which there is much that is suggestive, coupled with judicious admonitions, to cause us to look back upon what we had been, and to open up to us bright visions of the future, if we are only true to ourselves. But on the confused and chaotic period of early farriery light has at length dawned, dispelling its obscurity and diffusing order. That old system—if system there were any—never added anything to science; its practice, therefore, at best, was always mere peradventure, and consequently it made no advancement. The blush of day, the first streak of morn bursting from the darkness of night, is beautiful and cheering, but how much more invigorating is the risen sun! How delightful is it to bask in its beams, and to watch its genial influence on fruit and flower! So it is with the progress of science. These provincial unions are one of the results of this progress, and one great element of their usefulness is their tendency to heal any differences that may arise, by engendering a friendly feeling among the members of a common profession, all being alike subjected to the same opposition from without, and having to contend with similar difficulties in their avocation. By them is thus awakened a sympathetic feeling, which leads to mutual support. At the same time an opportunity is afforded for united expression of opinions on questions affecting the body as a whole; and although it may not be theirs to direct and to alter, it may be to suggest; and of this we are sure, if a request emanating from the Association, as a body, were communicated to the Council of the Royal College of Veterinary Surgeons, it

would receive both due consideration and, if deemed advantageous to the profession, acquiesced in. This leads us to remark that, perhaps, hereafter it may be found desirable that an aggregate meeting of the societies, by deputies, should occasionally be held—call it a Conference or a Congress, whichever term may be preferred—at which subjects affecting the vital interests of the body may be introduced for discussion. We do not know, at the present moment, of any question of such import as to call for this, but it might arise, and here exists a power to meet the contingency, the elements of a moral force among ourselves, for "defence, not defiance," to prevent encroachments and to maintain our rights. It is well to be on the watch-tower, forearmed, and thus prepared for whatever may arise.

We believe what has been done, and is being done, by these associations, to be fraught with the greatest amount of good to the profession. Wisdom is gained by freedom in discussion, and although it is in every sense desirable that at these meetings a topic for consideration should be introduced in the form of an essay on a given subject, duly announced previously, yet we are not prepared to say that an equal amount of benefit is not derived from the *after* conversation that takes place at the social board, without the formality of having to rise and address the president, &c., since this induces restraint, although it is unquestionably conducive to order, and, in a well regulated debate, is indispensable. It is then that friendly suggestions are made, useful hints are dropped, and little extravagances of practice checked and corrected, while new methods of cure and the employment of recently discovered remedial agents are communicated, which often determine future practice. We well remember the conversaziones that once took place at the Royal College of Veterinary Surgeons, and believe that much good resulted from them. Facts were elicited by the freedom of conversation that took place which were of great value, and an interchange of opinions led to increase of knowledge, while between the different branches of the medical profession and its auxiliaries, a friendly and courteous intercourse was engendered, and each encouraged and strengthened the

other. Might these not be advantageously revived, and with them be associated the proposed lectures by Professor Varnell? The last-named would admirably precede the former, and furnish a subject for the subsequent conversation. At these meetings mere medico-political questions should be abstained from, and all topics eschewed on which it is known that differences of opinion exist likely to lead to angry controversy, or to awaken unfriendly feelings. Instead thereof those inquiries should be instituted in which all take a common interest, and from which all necessarily derive a corresponding advantage, when these meetings are wisely conducted. Thus would there be those generous sentiments excited towards each other which give proof of noble-mindedness, the result of harmony and of union. We concur with what has been stated in reference to similar assemblies:—"The amount of good done by these pleasant gatherings is not to be gauged by the precise number of scientific facts or principles that may be understood at the time, or remembered afterwards. We should rather look at the general stimulus which contact with new truths and the wonderful discoveries of science must surely give to all attentive minds. Inquiry is awakened, leading afterwards to more certain and definite knowledge; new ideas and impressions and maturer views are gained of subjects only partially known before, and so the mind is refreshed, the intellect strengthened, and the man, as a whole, is elevated to a higher and more commanding status."

And now one word more. While the North of England has so nobly done its duty in connection with these associations (nor would we forget the West of Scotland, which was early in the field), and the South and the West united, are endeavouring to do theirs, what is the East of England about? Before another year closes we hope to have to record the formation of a medical society for that division of our country, and also its proceedings, which, in common with others, will enrich our pages, and contribute to the onward progress of veterinary medicine. But, especially, what is the Metropolis doing? "We pause for a reply."

The good old motto must not be forgotten—"Union is

strength." Let us each assist to bear the burthen of others, and thus lighten each other's load. A community of interest will awaken a reciprocity of feeling, and then the weight of responsibility will be individually borne with greater cheerfulness and ease, from an assurance of sympathy and support existing, should they ever be needed.

> "We live in deeds, not words; in thoughts, not breaths;
> In feelings, not in figures on the dial:
> We should count time by heart-throbs. He lives most
> Who thinks most, feels the noblest, acts the best."

COLEMAN PRIZE, 1864-5.

The following awards have recently been made by the Governors of the Royal Veterinary College, on the report of the professors relative to the merits of the respective Essays:

Silver Medal—"*Dum Spiro, Spero,*" Mr. James Pulling Heath, Exeter, Devon.

Bronze Medal—"*Veritas Vincit,*" Mr. W. F. Cooper, Gt. Berkhampstead, Herts.

Certificate of Merit—"*Nil Desperandum,*" Mr. Charles Morgan, Nonington, Kent.

Review.

Quid sit pulchrum, quid turpe, quid utile, quid non.—Hor.

A Few Observations on Shoeing.
By R. H. Dyer, M.R.C.V.S., Torquay.

The above is the title of a *brochure* received by us from the author. We like those individual exertions to make known and advance our profession, although we may not be very warm admirers of some of the auxiliaries attached to it by many of its members. Some of them we hesitate not to

denounce as highly objectionable, and others we fear tend to detract from its estimation by the public, and sink the professional man in the artisan or general tradesman. Not that we would speak slightingly of either the one or the other. Each is alike necessary, but we would have each to act separate and distinct in his calling, which would contribute to the general weal, without any interference with each other.

Quackery we have ever denounced, holding it to be unworthy of a scientific man, and that he should never sully his fair fame by resorting to it. It may be profitable as far as pounds, shillings, and pence are concerned, and if these be the gods he worships, let him have them; but it savours of charlatanism, and science can never be advanced or advantaged by it. "Better," says one, "is the little produced by honest and unpretending industry, with the conscience preserved bright as a polished shield, than to rise out of a slough dishonoured, clutching, it may be, the coveted prize, but covered with the filth and degradation of its surroundings."

We are quite aware that all do not go with us in these denunciations, and we therefore only claim for ourselves what we allow to them—the right of freely expressing our opinion.

Mr. Dyer commences his pamphlet with the saying, "No foot no horse," observing—

"This was a proverb given to the world in the eighteenth century, and it has continued from that time to the present as a bye-word amongst horsemen. Can a *man* travel comfortably with an *uneasy* and badly fitted shoe? No! It may be surmised that I am not competent to offer any information upon this subject, as I am neither a shoemaker nor a human surgeon, and cannot, therefore, be supposed to know anything about it. A person may as well argue that an architect knows nothing about building, because he was not brought up as a mason or carpenter. He is made acquainted with all the rules and principles connected with architecture; consequently he is more fitted to superintend the building of an edifice than the cleverest man *actually engaged* as a workman upon it; and so it is frequently with those who have given their attention to shoes and boots worn by men and horses.

"Corns in the feet of horses and those found upon the human foot have been, and still are, supposed to be analogous; this is an error. The two are caused (alike) by friction and pressure; here the analogy ends."

Then follows a brief description, with some useful remarks, of corns, bunions, &c., as existing on the feet of man, showing the necessity of a knowledge of the anatomy and physiology of the human foot in the making of shoes, so as to ensure a "good fit," and prevent these annoying growths. But, he adds—

"With reference to horse-shoeing, it may be remarked I am somewhat more interested than in the shoeing of man. I admit that I am interested

in the well-doing of those animals which are placed in the hands of man for use or abuse. The Society for the Prevention of Cruelty to Animals have never, as yet, that I am aware of, sent their officers into a shoeing-forge to see if any malpractice is carried on there. I think they ought to visit establishments of that kind, as well as many others I could name, if they desire to carry out their laws *properly* and *effectually*. It is not known, perhaps, to any person (except he be specially informed in such matters) that many acts of cruelty are committed in the shoeing of horses. I do not mean ill-usage, but as to the defective and improper shoes put on horses to travel with. If a *man* has to walk a long distance within a given time, and has no chance of shrinking from his task, and a pair of shoes be placed upon him which make undue pressure upon a particular part of his feet, he will exclaim that he is unable to proceed, as his feet are pinched: he would remove them at once, and claim to be allowed to rest for a while, and try to procure some easier fitting shoe.

"The same thing is seen in horses. I am not disposed to be personal, but it may be stated, without fear of contradiction, that many lamenesses which are brought under the eye of the veterinary surgeon are caused in a great measure by improper shoeing. Animals, in being made lame, and then compelled to travel in pain, are deteriorated in value. For example, a horse just purchased may have a good foot; he is shod by an unskilful hand, and is shod by him probably for a year without any *apparent* injury having been done to the feet; the injury is not known until the surgeon is called to attend, in the event of lameness,—then, if he is a practical man, he discovers the real cause of the mischief. These things, I repeat, may go on for more than a year without being known. Twenty years' experience as a veterinary surgeon in constant practice, with a large number of horses always under my care, enables me to state that no veterinary surgeon can carry on his practice *so well without* as with a forge; it affords innumerable opportunities of making himself acquainted with the capabilities and imperfections of the feet; and the farriers he employs are always instructed as to any peculiarity there may be in the formation or malformation of feet. The most eminent veterinary surgeons in London and elsewhere feel they cannot conduct their practice without a forge."

We fear this last clause is but too true, and the greater is the pity it should be so. Entertaining the views we do, we have always recommended that, while the veterinary surgeon should not be a shoeing-smith, he should have a forge entirely under his control, so that he may examine a foot when diseased, direct what is to be done and the shoe to be employed, and even how a healthy foot, having peculiarities or otherwise, is best to be shod. And here his duty ends. By thus acting, in a great measure at least, he would avoid the unpleasantnesses and anxieties connected with a forge; but at the same time it is imperative that he be acquainted with the *principles* of shoeing, the *practice* of which he should leave to the farrier. On the profits to be derived therefrom we have no wish or intention to comment, for it is not our province. We could point to communications on this subject, but we should be met with the observation, that it is to the collateral advantages the veterinary surgeon looks.

Mr. Dyer appends to his observations on shoeing a few words about the examination of horses as to soundness. The series of papers emanating from his pen and being published in this Journal, which we have no doubt our readers appreciate, supersedes the necessity of any observations being made by us on this division; one big with importance, and demanding the most earnest and careful attention of every practitioner, it being, as justly observed by him, "a part of the veterinary surgeon's profession which requires much thought and much experience."

We are permitted to add, that any member of the profession wishing to obtain a copy of the pamphlet may have one by sending a *directed and stamped envelope* to Mr. Dyer, at Torquay.

One thing we venture to speak of in commendation. Mr. Dyer issues with his notices, and, of course, at his own expense, a list of registered veterinary surgeons practising in the county of Devon, in which he resides.

Extracts from British and Foreign Journals.

ON THE TRANSFERENCE OF POISONS FROM THE BLOOD TO THE ALIMENTARY CANAL.

By Alfred S. Taylor, M.D., F.R.S.

Physiologists and toxicologists have long recognised the fact that poisons received into the stomach and intestines found their way by absorption into the blood, and were thence either temporarily transferred to the solid organs, or eliminated by the various excretions. The fact that, conversely, they might find their way into the stomach and intestines from the blood itself, when this fluid is the seat of poisoning, is a truth which is not commonly known, and has hitherto been only doubtfully accepted. The mucous fluids poured into the stomach and bowels must, however, be regarded as media of elimination, although poisons appear to be more frequently and more abundantly conveyed out of the body through other channels.

This question was briefly considered in reference to antimony in a former volume of these 'Reports.'*

* "On Poisoning by Tartarized Antimony," 'Guy's Hospital Reports,' October, 1857.

Orfila found arsenic in the alimentary canal of a dog which had been killed in four hours by the application of three grains of the poison to the cellular tissue. In an experiment, Dr. Brinton injected ten grains of tartar emetic, dissolved in four ounces of water, into the superficial femoral vein of a dog. At the end of fifteen minutes it was killed, and antimony was found in the contents of the stomach.† It thus appears that there is not only a transference of arsenic and antimony from the blood to the stomach and intestines, but that this transference takes place with great rapidity.

There was a practical difficulty to the admission of this doctrine of transference in the case of a human being. As the mineral poison was generally introduced into the body by the mouth, and not by a wound or by injection into the blood, the discovery of it in traces in the stomach after some days might reasonably be referred to the residue of a portion which had been swallowed. Thus, arsenic has been found in the stomach a week after it had been taken by the mouth; and, in one instance, I found antimony in the stomach of a person six days after the last dose, amounting to three grains of tartar emetic, had been taken. Its presence could not here be ascribed to mucous elimination, for the reason that it was not found deposited in any organ; and unless present in the blood or soft organs, there could be no source from which it would undergo elimination. Another objection to the general reception of the mucous elimination of mineral poisons, exists in the fact that the stomach and intestines frequently contain no traces of arsenic or antimony, while these metals are found in the blood, liver, spleen, and other soft organs of the body.

Notwithstanding these apparent objections to the view that poisons are transferred to the stomach and intestines from the organs in which they have been deposited, facts occasionally present themselves which do not appear to be explicable on any other theory.

In a case of antimonial poisoning recently tried at Liverpool ('Regina *v.* Winslow,' Liverpool Summer Assizes, 1860), it was proved in evidence by Dr. Edwards, who conducted with great skill a most difficult investigation, that, after the deceased, Mrs. Ann James, had been removed from any source of administration of the poison, the contents of the stomach discharged by vomiting continued to yield antimony up to the day of her death, *i.e.* for fourteen days after she had been placed in the infirmary, under proper superintendence. Dr. Edwards's evidence was to this effect:—The

† 'Poisons,' 2nd edition, p. 409.

matter vomited by deceased on the 10th June (the day of admission) yielded a well-marked quantity of antimony. On the 11th a trace was found; on the 12th and 13th it disappeared; on the 14th there was antimony; on the 15th none. There was none on the 17th and 19th; it reappeared on the 20th, and was again absent on the 21st; but on the 22nd, the last day on which the vomited matter was examined, there was a trace. During the whole of this period the fæces and urine were found to contain more or less antimony. Here, then, we have the remarkable fact, that not only may antimony be found in the contents of the stomach up to the twelfth day after the last dose, but the elimination of this metal may assume an intermittent character. The reader will find a notice of this intermitting elimination of antimony in the second edition of my work on 'Poisons,' p. 52.

Was this discovery of antimony in the mucous contents of the stomach of the deceased to be referred to the retention in that organ of any portion of tartar emetic administered previously to the 10th June, or to the mucous elimination of that which was already in the body, but which was rapidly disappearing from the soft organs? It is difficult to suppose, from the known solubility of tartar emetic, that under such constant vomiting the stomach would not have been cleared of the last dose in a much shorter time than a period of twelve days, especially when it is considered that at no time, probably, had more than one or two grains been given to the deceased at a dose. Any intermediate administration, although at first suspected, was negatived, not only by moral circumstances, but by the chemical results. At no time was the antimony found in the vomited matters in more than the merest traces; whereas a fresh administration would have been at once indicated by a marked increase or difference in the amount. In short, the quantity throughout corresponded to that which might have passed off by the secretions; and after death, traces of antimony were discovered in the stomach and intestines, in the spleen, liver, and lungs. The whole quantity, however, left in the body after the period of fourteen days, could not be estimated at more than one tenth part of a grain. This strongly confirms the opinion given at the trial of Palmer, and elsewhere recorded—that antimony does not commonly remain in organs important to life for a longer period than from fifteen to twenty days after the last administration.

If the antimony found in the vomited mucous matters depended on any residuary antimony in the stomach, there is no reason why some should not have been found in them

daily. The intermission in the appearance of the metal in the mucous fluids is in favour of its having been eliminated from the blood, at least in the latter part of the illness of the deceased.

It would seem, therefore, in Mrs. James's case, that there was no reasonable explanation of the facts, except that the antimony found by Dr. Edwards was really eliminated in the mucous secretions of the stomach during life. He gave this opinion in his evidence, and thus put an end to a suspicion which had arisen, that the accused person, who had seen the deceased once or twice while in the infirmary, had taken the opportunity of administering to her one or more doses of the poison.

The views here expressed receive confirmation from some experiments performed by Dr. Pavy and myself in the summer of 1859, and therefore wholly irrespective of the case of Mrs. James.

Experiment 1.—Dr. Pavy injected a solution of six grains of tartarized antimony into the jugular vein of a dog. The animal was found dead in the morning, within eight hours of the performance of the experiment. Dr. Pavy brought to me the stomach and intestines of the animal. The mucous membrane of the stomach was much corrugated, but there were no marks of irritation, nor any signs of unnatural redness. In the middle portion of the duodenum there was slight redness, and there was injection and ecchymosis about the lower part of the jejunum and ileum. The ileo-cæcal valve was very much injected. The lower half of the large intestines had its mucous membrane highly corrugated and strongly reddened, and the redness of the membrane was particularly marked in the rectum.

The substance of the stomach, with the mucous matter adhering to it, was examined by the process of Reinsch, and a quantity of antimony was extracted, which was calculated at about 1-700th of a grain. Antimony was also found in the rectum in about the same proportion.

Experiment 2.—July 4th, 1859. Three grains of tartar emetic in solution were injected by Dr. Pavy into the jugular vein of a dog. The animal was found dead, and is supposed to have died in about eighteen hours after the injection. In this experiment, the analysis was confined to—1, the contents of the stomach; 2, the contents of the large intestines: and 3, the contents of the small intestines. The liquids were free from blood, but those of the intestines obviously contained biliary matter. The largest quantity of liquid amounted to six fluid drachms. On the application of Reinsch's process,

antimony was distinctly separated from each of the liquids, a well-marked violet film of metallic antimony being obtained on the copper in each case. The quantity was small, probably not exceeding the 1-1000th of a grain in any one instance.

These experiments, therefore, clearly prove by the results that antimony may not have entered the body of a human being by the stomach or bowels, and yet be found both in the coats and in the liquid contents of these parts of the body.

Experiment 3.—Two grains of tartarized antimony were dissolved in four drachms of water, and injected by Dr. Pavy into the jugular vein of a dog, without apparently producing any effect beyond vomiting. Twenty-six hours afterwards, three grains, dissolved in four drachms of water, were injected into the jugular vein on the other side of the neck. Speedy vomiting was induced; but, in spite of this, the animal died during the night. The appearances were,—a strongly rugose condition of the mucous membrane of the stomach, with slight injection towards the pylorus; the duodenum was slightly injected; the mucous membrane, however, was for the most part pale. The mucous membrane of the lower part of the small intestines, especially in the rugæ, was decidedly reddened. The margin of the ileo-cæcal valve was much injected, and the mucous membrane of the large intestines was reddened in patches. On analysis, antimony was found in the coats of the stomach and of the intestines. There were no contents.

This experiment shows that, whether antimony finds its way into the body by the blood or by the alimentary canal, the appearances present very much the same character, and are chiefly manifested in the cæcum and the large intestines. It is here worthy of remark, that in the case of Isabella Bankes ('Reg. *v.* Smethurst,' 1859), and of Mrs. Ann James ('Reg. *v.* Winslow,' 1860), the parts of the body chiefly affected were the cæcum and large intestines.

Arsenic.

Experiment 4.—Dr. Pavy injected into the jugular vein of a dog a quantity of Fowler's solution of arsenic, corresponding to one grain of arsenious acid. The dog died in about ten or twelve hours. Dr. Pavy delivered to me for analysis—1, the contents of the stomach; 2, the contents of the small intestines; and 3, the contents of the large intestines. Arsenic was found in each of the liquids, by Reinsch's process, in about five minutes. It was deposited on copper, in a steel-blue film. The quantity obtained was in imponderable traces.

Experiment 5.—June 22nd, 1859. Half an ounce of Fowler's

solution (corresponding to two grains of arsenious acid) was injected by Dr. Pavy into the jugular vein of a dog. The animal vomited almost immediately, and it died in about eighteen hours. On inspection, the mucous membrane of the stomach and intestines was found intensely injected; in fact, in a state of acute gastro-enteritis, chiefly marked from the stomach to the cæcum. The coats of the stomach and intestines, with the adhering mucous fluids, were analysed, and arsenic was distinctly found in them.

Experiment 6.—Two drachms of Fowler's solution, corresponding to one grain of arsenic, and two grains of tartar emetic, dissolved in two ounces of water, were injected into the jugular vein of a dog. The animal was found dead within twelve hours.

The mucous membrane of the stomach presented dark-red patches; the upper part of the duodenum and the central portion of the small intestines were also reddened. The mucous membrane of the lower eight inches of the ileum had the dark colour of venous blood. The ileo-cæcal valve and lower part of the rectum were much injected; the cæcum and upper part of the large intestines were only slightly reddened.

The stomach and large intestines were examined by Reinsch's process, and yielded both antimony and arsenic in small quantity.

From these results it appears that arsenic as well as antimony may find its way into the stomach and bowels and their contents, although not taken by the mouth or injected by the rectum. These facts may be of some importance in cases where reliance is placed on the presence of mere traces of either of these poisons in the stomach or bowels, as furnishing evidence of recent administration by the ordinary channels. When arsenic and antimony are found in more than traces in the stomach and intestines, *i. e.* in powder, or in solution in large quantity, no objection can be taken to the medical inference that they have been taken by the mouth. It is impossible to admit that the solid sulphides of arsenic or antimony found in the coats of the stomach or intestines of a body, in a case of exhumation, can have been derived from the metal eliminated by the mucous secretories from other parts.

CATTLE PLAGUE—DISEASED MILK.

The investigations upon the microscopic characters of milk taken from animals suffering from the plague, or recovering from it, have developed results which are anything but consolatory to the consumers of that article of diet. In our last observations upon this subject, we took occasion to suggest the importance of avoiding the use of milk containing morbid elements as food for children; and where any doubt exists, some substitute should at once be employed—a mixture of eggs, well beaten and diluted with thin barley-water and sweetened, would be palatable, nutritious, and harmless. Microscopic examination at once sets the question of purity at rest, but such a test is not at all times at hand. In its absence, the more simple domestic operation of boiling may be employed, not as an absolute test of perfect purity, but as a guarantee of wholesomeness. No very bad specimen of milk can be boiled without undergoing coagulation or curdling, but at the same time, milk containing morbid elements in moderate amount will not show any indication of impurity under this treatment. Boiling is, at any rate, the only chemical operation that can be adopted generally, and it should invariably be had recourse to as some slight protection.

It will be in a certain sense interesting, if not reassuring, to our readers to be enlightened upon the subject, and for this purpose we quote from the notes of recent microscopic examinations.

For the information of unscientific readers we may premise that the elements that will be alluded to are the milk-corpuscles or cream-globules, pus-cells, which are the principal constituents of the matter of abscesses; and granular cells, such as are found in fluids exuded during inflammation. According to the preponderance of the two latter products will be the morbid condition of the milk.

No. 1. Milk from a cow dying of the plague.

The fluid is thick, yellow in colour, and when poured into a vessel does not show any froth upon the surface—the occurrence of froth upon the surface of milk is said to be an indication of its goodness, not a reliable test, however, as many experiments have proved.

Under the microscope this specimen presented the following characters: Milk globules small and clustered together; numerous pus-cells are intermingled with the milk-globules,

and give to the fluid its viscidity and colour. Specific gravity, 1020.

No. 2. Milk from a cow after a few days' illness; two quarts are obtained at each milking.

The milk is thin, but shows froth upon the surface when poured into a vessel.

Under the microscope the milk-globules are few in number, small in size, and scattered; pus-cells are present, and also a few granular cells. Specific gravity, 1024.

No. 3. Milk from the case No. 1 a few days later; the cow now gives four quarts per day.

Under the microscope pus-cells and granular cells are present in addition to the milk-globules. Specific gravity, 1024.

No. 4. Milk from a cow suffering from plague in a severe form; only a small quantity can be obtained, which is thick and yellow in colour, and has a peculiar animal smell.

Under the microscope this specimen proved to be charged with pus-cells and large granular cells.

Some further examinations of cream from diseased milk have been made, and in most instances prove that some morbid elements still remain in it. Sometimes the quantity is less than in the milk and sometimes greater, so that the hope expressed in our last week's observations on this point cannot be longer entertained. All that can be said is, that cream from diseased milk is sometimes free from morbid elements, but at others it contains them in abundance. This circumstance shows the absolute necessity of a large number of examinations being made before any conclusions of a general nature are drawn.

It may probably be objected that when animals are badly affected or dying of the disease, that the quantity of milk obtained would be too small to make it worth while to use it; this is doubtless true in certain instances where the secretion is almost arrested, but many animals suffering from the malady very severely continue to give a considerable quantity of milk, from two to four quarts per day, and as they improve in health the secretion is gradually increased, without a corresponding improvement in its quality. The next examples are selected from cases that were improving when the milk was examined, or otherwise were considered to have perfectly recovered.

No. 1. A Dutch cow recovering eight days after the attack, gives two quarts of milk per day. In this specimen the pus-cells are very abundant, the granular cells are fewer in number. Specific gravity, 1023.

No. 2. A cow that has recovered from the disease and gives four quarts per day.

A portion of the milk after standing for some time separated into two parts; a quantity of flocculent deposit falling to the bottom of the vessel, and leaving a serous-looking fluid at the top. The deposit under the microscope consisted of pus-cells and oil-globules, and the fluid altogether is more allied to pus than to milk.

No. 3. A cow that has been well since August 20. This was a very severe case, and the only one that recovered out of twenty attacked. For some time past this cow has been giving nine or ten quarts of milk a day.

The fluid looks and tastes well. Specific gravity, 1028. Under the microscope a few pus-cells and granular cells are to be observed. These morbid elements are not sufficiently abundant to render the milk unwholesome, but their presence in the milk of an animal so long after recovery is very significant.

At the very commencement of the outbreak we called public attention to this point, but the general adherence to a notion that somehow became prevalent, that the milk ceased to be secreted as soon as a cow was attacked, established a feeling of security, which these investigations prove to be false and dangerous.

Our readers must decide for themselves as to the proper course to be adopted under these circumstances. There is no disputing the facts that milk highly charged with diseased products is obtained in considerable quantities from cows at different periods of the attack and after recovery. It is also true that in many sheds there are no cows left excepting those that have had the disease; and some of these animals are giving seven or eight quarts per day.

There is no positive evidence of injury having resulted from the consumption of the milk given by these sick and convalescent animals, but still inflammatory products are not precisely what one would select for a part of the daily dietary. There are only two ways out of the difficulty—either to have all the milk sold examined by competent persons, or, what is more simple, to do without it for the present altogether.—*Agricultural Gazette.*

THE PRINCIPLES OF BREEDING HORSES ADAPTED TO THE LOCALITY.

(*A Lecture read by* T. D. Gregory, M.R.C.V.S., *before the Bideford Farmers' Club.*)

(*Concluded from p.* 447.)

To have good feet is a very important point, especially for road work. "No foot, no horse," should never be forgotten. They should be open at the heels, with good, prominent frogs, and firm, hard, concave soles, and good crust. The quarters and thighs should be muscular and look square when standing behind the horse, the hind legs well under him. We cannot be too particular about the hocks; have them large, sound and clean, and free from the diseases already named. Get all these points I have enumerated as near perfect as you can in your sire, and you will not be far wrong. But if any of them be essentially weak and much out of proportion, all the rest, however good, will not avail; like the beam of a house, one weak part in it will endanger the whole fabric. Next to the thorough-bred horse, the acknowledged pure breeds used for stud purposes are found in the light and heavy draught horses. As the very heavy horses, bred in Lincolnshire and the Midland Counties, are not likely to find much favour in this locality, even if they found their way here, we may pass them over; and choose rather to say a few words upon the lighter kinds, as being best calculated to do good service with our mares. The first in succession that should come, perhaps, is the Cleveland horse. This is the animal better known to you as the Yorkshire horse, or, as he is sometimes called, the Coaching Stallion, standing over sixteen hands, with fine shape, plenty of power and motion, and able to trot sixteen miles an hour on the road. He is now very seldom seen amongst us, and, from inquiries lately made, he is becoming very scarce, even where he was once so carefully bred and so much used. I believe a pure-bred animal of this kind would do us much service if he could be procured. As a proof how rare this breed has become, there was not to be found, last July, at the great exhibition of horses at Islington, scarcely one that was worthy of his name, although prizes were offered for his class. The reason assigned for his scarcity, by some, is that the taste for large horses for gentlemen's carriages has altered, and given place to a lighter description of animal, about

fifteen and a half hands, with blood. This has naturally led to the neglect, and crossing with the thorough-bred, and the true type will soon become extinct unless efforts are made to keep it pure. The Suffolk should, perhaps, come next in order. With him you are more or less familiar, having had from time to time stallions of this kind travelling the neighbourhood. They are generally chesnuts, light-legged and tolerably active; but as far as I have had opportunities of judging, they have not succeeded as well as could be wished in crossing with our mares, the progeny usually being overtopped, that is, their bodies being too heavy for their legs. There is want of action also, from the shoulders being too upright and loaded at the points. The Clydesdale is a horse not so well known amongst us as he should be, possessing, as I believe he does, many qualifications as a sire suitable for our locality. He is short in the leg, with good feet, not too large; oblique shoulders; light at the points, giving him quickness of step, and good action. He is a little long in the body, but has great strong quarters and clean hocks. A magnificent specimen of the pure Clydesdale, many of you who were at the Bath and West of England Society's exhibition last year, at Bristol, had an opportunity of seeing, belonging to the Duke of Beaufort, who is very fond of the breed. Professor Low, in his work on the 'Domestic Animals of Great Britain,' says that the Clydesdale horse, as it is now bred, is usually sixteen hands high. The prevailing colour is black, but the brown or bay is common, and is continually gaining upon the other. They are longer in the body than the English black horse, and less weighty, compact and muscular; but they step out more freely and have more useful action for ordinary labour. They draw steadily, and are unusually free from vice. No such loads are known to be drawn at the same pace by any horses in the kingdom as in the single-horse carts of carriers and others in the West of Scotland. Having thus far particularised the pure-bred sires as likely to find their way here and be useful, I shall pass on, and say a few words upon the mare, of whose qualifications we must not be regardless. She has to play an important part in the drama. I am sorry it is too often the farce she plays in. She should be healthy, good constitutioned, and free from disease; have good deep shoulders and short legs, and able to go. The nearer she is to perfection in shape, the better her chance of breeding well. She must have size and substance if you want to breed big stock. You never can depend upon getting good-sized colts from small mares, let the sire be ever so large; if you think so,

you will be disappointed. It is one of the greatest fallacies that can be entertained in breeding. A stout half-bred mare put to a thorough-bred horse will often, however, breed a colt with more bone and substance than the parents. It is seldom men like to give up the services of a mare as long as she is useful and can perform special duties satisfactorily. Nor would it at all times be advisable, in a pecuniary point of view, perhaps for the sake of breeding an ordinary animal; but rather than breed from a bad mare I should much prefer waiting until the good one could be spared. If she is verging a little upon old age I should prefer her to the younger one, provided she had no other qualification than youth to recommend her. But if you have a younger mare with the requisites in her, I think it not an unprofitable or bad plan to put her to the horse at three years old, at which age, for agricultural purposes, she is oftentimes taken up and broken. She may be turned away in foal, and well kept through the summer and following winter; do a little work again in the spring; drop her foal and be again turned out for the summer. At four and a half the colt may be weaned, and the mare come in to her regular work, unimpaired in her constitution, and last year's feed paid for by the foal. Of course, if this plan be adopted, the mare must be well kept. Lord George Bentinck, than whom few greater authorities upon breeding horses could be found, tried the experiment of breeding from young mares with success. I think the mare *Monstrosity* bred the *Ugly Buck* at three; with what success those who knew the horse can testify. He tried mares a year younger, but failed to produce healthy foals. With regard to the management of the mare during pregnancy, I believe, as a rule, light work on a farm, with pretty good keep, is conducive to the health and well-doing of the dam, as well as the foal in embryo, up to a few days of the foaling time. It is not an uncommon thing, as you know, for the mare to foal during the dinner hour. After having worked through the morning, she is left feeding, whilst her attendant goes to recruit his inner man. On his return to the stable, the young animal has been brought into the world, and found to be strong upon its legs. Still, this is too great a risk to run, and I should advise rest from labour for a week or two at least. As the foaling term approaches, the mare should be often seen, but not disturbed. The labour, in a natural way, as before hinted, is uncommonly quick, and should the pains be observed to continue, even for a few minutes, depend upon it something is wrong, and assistance required; pass your hand, well greased or oiled, up the

vagina of the mare, and if you find anything out of the way, such as a leg presenting without the head, or the head without the legs, and you are not expert, and do not understand the business, send for somebody that does, or you will certainly lose your foal, and probably your mare. The best time, in the ordinary way, for foals to drop, is in May or the beginning of June. We are not often blessed with such a season as the present one, and we do not get grass before that time; and besides, if the mare is required for spring work she cannot be spared before. After foaling she should be kept well, and in a safe place during the summer, with a proper shed or some other protector against the sun and showers. Foals are very tenacious of wet; they cannot well resist it, and many colts have been sacrificed to a heavy summer storm. Provide for them good pasturage and shelter, and they will not generally give you much trouble until the weaning comes, the best time for which, with a tolerably early foal, is the middle or latter end of September; if weaned before, the young animal's assimilating organs are not strong enough to supply itself with sufficient nutriment, and if later, they will not be sufficiently recovered from the change consequent upon the loss of the mother before the winter weather sets in. The foal should be taught to eat oats as soon as possible, and to have a good quantity during the first winter. A good rule is to let his belly be the measure. He should have a hovel to run to, and a companion if possible. I don't approve of confinement for young animals, but especially colts; exercise is conducive to health, muscular development, and action. From the time of his weaning, in fact, to the time he is taken up, he should be always fairly kept. I don't believe in pampering or overfeeding; but let him not be under-kept at one period of his growth and forced at another—not during the summer to be made fat and sleek, and allowed in the winter to stand shivering and half starved, exposed to the inclemency of the weather, with no other food than he can procure for himself from the scanty growth around him, or any other shelter than the friendly hedge. If you want to grow a good horse, don't begrudge him the enjoyment of good food and shelter up to the time when his life's slavery commences—poor brute—!—He will be better able to serve you, whether he be required to devote the remainder of his life to the laborious duties of the farmer, or to administer to your pleasures or necessities in the hunting-field or the road. The colt having, in imagination, reached to three or four years old, I fear space forbids my following him further at present. At some

future time, perhaps, with your permission, I may carry him on through his education, stable management, and treatment as an adult animal. Before, however, he is taken up for use the operation of castration should be performed upon the male, and I believe the best season for this to be spring, when he has reached the age of two years. If allowed to go beyond that time colts often become troublesome, especially if it be required to keep two or three together. Of course, if you have conveniences for keeping them apart, and you think another year would add to the development of the young animal, I see no objection to his going on to the next spring. I don't so much approve of the autumn for the operation, as at that season all animals are more or less debilitated, and colts do not so quickly recover from its effects, especially as they have the long winter before them. However, that is a matter that may be left to your own experience and choice. I find now that I have written more than I at first intended, and fear I have exhausted your patience; but still I hope what I have said will not have been uninteresting. I have not started any alarming or expensive theories, but have endeavoured, in plain terms, to show what I consider the best means of improving the breed and management of your colts. Still, all I have said may, perhaps, be summed up in a few words. Be particular in selecting sires, and let them be of established breeds. Don't breed from any mare that is not possessed of good qualifications, and, when your colts are produced, keep them fairly, and protect them properly, until they are taken up for use. Before I conclude, it may not be considered out of place if I say a few words touching an association that has been formed in this neighbourhood for the purpose of carrying out the objects I have, in some measure, been advocating. It is called, as you all are doubtless aware, "The North Devon Horse-Breeding Association." The names of the gentlemen forming it are, I am sure, a sufficient guarantee of their good intentions, and, as an earnest, two sires have been procured, which, it is hoped, will be found to answer the purposes intended. If you think fit to support it by using the horses, the subscribers are prepared to go on to supply any demand that may be necessary from season to season; and I trust that in the course of time the results will show that the efforts of the association have been properly directed, and that a real improvement has been effected in the horse-breeding of the locality.

NORTHUMBERLAND AND DURHAM MEDICAL SOCIETY. NEWCASTLE MEETING.

THE CATTLE PLAGUE OR TYPHUS.

By D. Embleton, M.D.

On the arrival of this disease in Newcastle it was thought desirable that some account of it should be laid before our Society and placed on record in its 'Transactions.'

The following brief account of it was, therefore, hastily drawn up for the last meeting; it contains a relation of its introduction into Newcastle and neighbourhood, and a description of the disease, both kindly drawn up at my request by Messrs. Wilkinson and Stephenson, the Government Inspectors of Cattle for this town and district; and I have added the details of some *post-mortem* examinations of the bodies of cows, victims of the plague.

A disease so contagious to cattle, so widely spreading, so little amenable to treatment, and so fatal, endangering one great source of the food of man, cannot fail to be of interest to a society like ours.

This disease, new to modern times, appears to have found its way from the north-eastern part of Europe to the western countries, according to some by direct contagion and importation; according to others, by atmospheric influences; and, according to a third set of observers, by both means. With these last I feel myself inclined to agree.

At the end of the third book of his 'Georgics,' Virgil has poetically described an epidemic, which he says was once very prevalent and extremely fatal in Italy:

> "Et genus omne neci pecudum dedit, omne ferarum;
> Corrupitque lacus; infecit pabula tabo."

This disease occurred in a hot autumn, and must have resembled in many of its features the present cattle plague, which happily, however, has been confined to the bovine race, at least hitherto.

This cattle plague of ours bears a strong resemblance in various points to the typhus of man, which now coexists with it in this town.

As regards the treatment of the disease, little or no advance appears to have been made, nearly all the affected cattle dying in a few days.

The principal things to be done in the present state of our knowledge are to protect the living from contagion, to promote the greatest possible cleanliness in the byres, to prevent

overcrowding of animals, and to make the most liberal use of trustworthy disinfectants; to kill the infected beasts at once, and separate, as soon as possible, everything belonging to them from the living and healthy.

ON THE CAUSE OF THE OUTBREAK IN THIS NEIGHBOURHOOD.

From inquiries we have made, we have learnt that on the 21st of August, 1865, the Lord Raglan steamship brought into this port a cargo of cattle from Rotterdam; they were principally fat cattle, but amongst them were eight lean ones, which, together with some of the fat stock, were consigned to Mr. John Scott, cattle salesman, of this town. The eight store cattle could not be sold in our market on the 22nd, so were put into a field at Fenham until the next market day, the 29th, when, after again standing in our market, they were sold to Mr. Ritson, of this town, who took them to Hebburn and mixed them with some English cattle. In a few days five of the cattle he had bought in the market were dead, and the other three he brought to Newcastle were destroyed. The disease spread likewise to his English cattle, which have since all died of it or been destroyed.

In our market, on the 29th, was a drove of lean Irish cattle; they stood beside the eight foreign cattle we have already accounted for, and, not being sold, were taken on to Morpeth, and sold in lots to different purchasers. We believe that it can be proved that they carried the plague to their different destinations, namely, Felton, Cambois, and other places where the disease has since destroyed numbers of animals.

We next hear of the disease at Carlisle, where two cows belonging to Mr. Davis, farmer, Fenham, had been taken for sale; they left Fenham on the 5th September, were sold at Carlisle on the 6th, and the next day they were found to be suffering from "rinderpest" and were destroyed. The man who took them to Carlisle is now undergoing eight weeks' imprisonment for so doing. These cows had been going on our town moor amongst from five to six hundred others, many of which come to the byres in the town to be milked, the disease would, therefore, be easily carried about.

On the 12th September it broke out in a byre in Leazes Lane, Gallogate; about the 17th it appeared in Gee's byre, in Stowell Square, and it has spread in the immediate neighhood of these two byres.

About the same time, also, it broke out in Hindson's byre, which is in the neighbourhood of Fenham, and also in a byre at Fenham, belonging to Mr. Alder.

Since the 21st August the Lord Raglan has brought two cargoes of diseased animals from Rotterdam, one on the 17th September, the other on the 8th October, but Mr. Wilkinson detected the disease, and prevented the animals entering the town. We think that the importation from Rotterdam and other ports where the disease is known to exist ought to be prohibited, or the cattle should, upon their arrival here, be put into quarantine for ten days.

In conclusion, we may state that we believe the disease has been brought here by foreign cattle, that it is exceedingly contagious, and that it is not atmospherical nor has it been engendered in our byres.

CLEMENT STEPHENSON.
H. E. WILKINSON.

(*To be continued.*)

THE SIBERIAN CATTLE PLAGUE; OR, THE TYPHOID FEVER OF THE OX.

By WILLIAM BUDD, M.D., Clifton.

(*Continued from* p. 710.)

UNLESS we have an eye to it in time, many of the modes of transmission here indicated are likely to have no little hand in spreading the pest. *A priori*, it would seem certain that the disease must be disseminated chiefly by the discharges from the intestine and the nostril, and by exhalations from them. Although the view does not appear to have presented itself to any of the scientific men who have written on cattle plague, incidental evidence of its truth is not wanting in their works. Take, among others, the very general remark that the *manure* of infected homesteads has an especial virulence in conveying the contagion. As we shall see presently, however, on other grounds, no special evidence of this kind was needed.

As the discharges are liquid, their first effect must be to taint the soil on which the patient stands. In the same way they taint the ship, the wharf, the cattle-truck, the public road, and the market.

In the country, taking the line of watershed, it would seem to follow that these discharges must often, like those of cholera and of human typhoid, contaminate the drinking water, which, when in the form of small running streams, may, in its turn,

become the means of carrying the disease to distant spots. The attention of Continental observers does not seem to have been called to this mode of transmission; but physicians here who are acquainted with the evidence collected upon it in regard to the two human diseases just named will easily see how it may often intervene in causing many unexplained outbreaks.

In the town dairy, on the other hand, these discharges are distributed by the sewer. In certain districts of London, for many weeks past, the sewers have been constantly fed by this infectious stuff. From what we know of this mode of dissemination in the typhoid fever of our own species, it is more than probable that effluvia from this source, finding their way through untrapped drains, may carry the cattle plague to cows that have had no other contact with it. Practically, the greater part of the poison cast off by the infected animal takes the form of manure. This being so, all thoughtful men must be anxious to know what has become of all the cattle-plague manure created in London and its suburbs within the last two months. If it be true, as many fear, that much of it has already been taken into the country to be spread over the land, the results may be disastrous indeed. I have myself reason to know that no longer ago than Saturday last (August 5th) a load of manure, which had undergone no disinfecting process, was sent from an infected dairy to one of the canals which radiate from London, to be despatched thence into the country. It would be interesting to know what has become of that precious cargo. Did it perchance meet any droves of cattle in its way through London? Is it at this moment travelling in some slowly moving barge, with its trail of infection behind it, to the meadows of Berkshire or Bucks? To what manure-yard, next, were the horse and cart sent which first bore it away?

As to the greater or less degree of tenacity with which the specific poison retains its specific power, opinions seem to be somewhat divided. Some maintain that this power is very evanescent, while others as strongly hold that it endures for indefinite periods of time. If their opinions be taken absolutely, it is probable that both parties are right and both wrong. I have elsewhere endeavoured to show that the more rapid the natural development of a poison of this class, the more rapid, *cæteris paribus*, is its spontaneous extinction also; that here, in fact, as in all other parts of organic nature, rapid growth and rapid decay are strictly correlative. The poison of rinderpest furnishes, no doubt, no exception to the rule. And so it may well be that, in wet seasons particularly, the

infection often speedily dies a natural death. But the same probably no longer holds of the poison in the dried state. It is to be lamented that a point which admits of such easy determination by experiment should not have been so tested. This is an omission which will, no doubt, be repaired by some future observer. Meanwhile we know that other contagious poisons, when dried, retain their properties for very long periods, and, as this state is one which almost entirely protects organic bodies from molecular change, there seems no reason why it should fare otherwise with the poison of rinderpest.

Under the rapid evaporation which often prevails in the open steppe, complete and rapid desiccation of the intestinal discharges of cattle affected with cattle plague must often occur on a very large scale. The resulting product resolved, as it soon must be, into impalpable dust, and rising into the air with the great company of other organic germs, by which, as Pasteur and Ehrenberg have shown, our atmosphere is so thickly peopled, may clearly, like these germs, give rise to a crop of representatives whose precise parentage it will necessarily be impossible to ascertain.

With these various modes of dissemination before us, two well-known facts in the history of this epizootic may be easily understood. The first is that, when the disease is imported into the west, in addition to the outbreaks which can be directly brought home to contagion, other and outlying outbreaks occur, whose exact origin cannot be determined; and the second, that in the steppe cases often spring up whose exact lineage it is as impossible to trace as it would be to trace that of particular generations of fungi or infusoria.

Should the disease unhappily become rife among us, incidents of this kind—with our active trade, dense population, and incessant intercourse—are sure to be of frequent occurrence. In that event we need no prophet to tell us that men who have never devoted an hour to the study of these arduous problems will write to the *Times*, citing the facts in triumphant proof of spontaneous origin, and arguing, with all the flippant self-confidence which is so characteristic of ignorance, that cattle plague, which, with one exception, has not visited our shores for a thousand years, is a home-product which may turn up at any time, anyhow, and anywhere.*

* This prediction has already been more than verified. A more than commonly foolish letter by a writer of this class appeared in the *Times*, on Thursday, August 10th, under the signature of W. R. This writer has the assurance to say that the well-weighed opinion of my friend Professor Simonds, founded on a deep study of this and kindred questions, that cattle plague never springs up spontaneously, is an opinion which "common-sense" stamps with utter absurdity.

Reasoning like this, absurd though it be, will not fail to impose on the unscientific. And then will arise in many minds doubts as to the use of preventive measures at all; and vacillation and feeble and uncertain action will ensue, where the most decided and vigorous action is the one thing needed.

The precise way in which the dissemination of the disease is affected by season, by temperature, and other meteorological conditions, has not been studied with the attention the subject deserves. Whether this fever, like the typhoid fever of man, be more prevalent in the autumn and in dry seasons, interesting as such an inquiry would be, there are no data sufficiently exact to show. Nor is it known to what degree the specific poison has the power of resisting extremes of heat and cold. A statement which occurs, I think, in the Russian Government Report, to the effect that the disease, on a particular occasion, was communicated by the dung of some diseased oxen, which had lain for months under the frost and snow of a Russian winter, is the only fact with which I have met which bears in any way on this question. Here is a point, again, which might be decided at once by appropriate experiments.

In this history there is much, it will be objected, which differs widely from anything we know of in the typhoid fever of our own species, between which and rinderpest it is sought to found here so close an analogy. But the differences, whatever their amount, are clearly differences of degree only, and not differences of kind.

To teach that what holds of the law of propagation of the typhoid fever of the ox cannot be applied to the typhoid fever of man, simply because the one is more virulently contagious than the other, is exactly the same thing as it would be to teach that what holds of the law of propagation of the common thistle cannot be applied to the dwarf thistle, because the seeds of the former are more vigorous and abundant than those of the latter. That there is a wide difference between the contagious power of cattle plague and that of human typhoid fever there is no reason to doubt. But even this difference is, in part, more a thing of circumstance than of essence.

(To be continued.)

Translations and Reviews of Continental Veterinary Journals.

By W. Ernes, M.R.C.V.S., London.

THE EFFECTS OF ABSTINENCE AND INSUFFICIENT ALIMENTATION ON ANIMALS.

By M. Colin, Professor at the Veterinary School, Alfort.

(*Continued from p.* 783.)

The result of this difference, as has been observed by Liebig, is that in the herbivora the oxygen, finding enough combustible matter in the hydro-carbon, respects the nitrogenous substances, and leaves them entire for their destination; while in the carnivora the oxygen, not finding enough of it in the neutral substances, borrows likewise from the nitrogenized. In other words, in the first the oxygen burns only the hydro-carbonaceous substances; in the second, it burns at the same time the hydro-carbonaceous and proteine substances. It is evident from this that the rations of herbivora, in respect to quantity, cannot be the same as that of carnivora. If the first wants a kilogramme of fecula for the wants of respiration in twenty-four hours, the latter would require four kilogrammes of flesh meat to supply the same want, for there is four times less carbon in muscular fibre than in feculant substances. Thus, when dogs are fed exclusively on flesh they consume an enormous quantity. I recollect a big yard-dog who ate regularly from six to seven kilogrammes (about 13 lbs.) every day without increasing in weight. Thus, when an herbivorous animal is deprived of food, and obliged consequently to feed on his own substance, it becomes transformed into a carnivorous. Having neither sugar nor starch to eat, he must take from his flesh the substitute for those principles which are wanted. Where will he find the respiratory and plastic aliment? In the animal economy these two are side by side in variable proportions—the adipose tissue and the muscular. If the first is in abundance, the latter is in less quantity. In fact, one kilogramme of fat contains six times more carbon than one kilogramme of muscular fibre. It may be conceived that the weight of the internal ration consumed by the animal subjected to total abstinence must necessarily be very variable. If an animal in a given time consumes one kilogramme of fat and two kilogrammes of muscular fibre, a lean animal of the same size and under the same conditions would consume eight kilogrammes of muscle deprived of fat, and the two rations would be equivalent.

The ration of the animal subjected to total abstinence is

then, really composed, as that of the animal under ordinary circumstances, of plastic aliments (fibrine and albumen), and respiratory aliments represented by fat. It is quantitatively less in proportion to the predominance of the fat. Therefore, in the hibernating animal and in the animal which is destined to suffer hunger the alimentary provision is principally composed of fat. It would require six times the amount if consisting of muscular fibre only. All the changes produced by emaciation prove that reabsorption has for its object the collection of the adipose and nitrogenous substances at the same time. We can see how this reabsorption is performed first on the fat. It takes this product from everywhere, but in a certain order. It commences by taking the subcutaneous fat; after that, that of the abdominal parietes; then of the mesentery and the omentum; then of the interstices of the muscles; after which it attacks that of the medullary canals, the bones, the cells of the liver, sparing in part that of the spinal canal, the fissures of the heart, the orbits, and temporal fossa. In those parts where all the fat can be removed without inconvenience, nothing is left. In the bones, where, as a rule, no empty space can be left, the adipose material is replaced by an albuminous serosity; absorption removes the fat, leaving the cells in which it is contained. This reabsorption deals with the plastic aliments in the following manner. It subtracts from every part something—here a little more, there a little less. The interstices become hollow, the muscular fasciculi become isolated, the aponeuroses diminish and become tendinous, the fibre losing its suppleness. It seems that the muscles lose principally their juices and extractive principles, and nothing is left but a half desiccated carcass, hard and without savour. Thus, the flesh has no longer its usual characteristics, and no wonder it has become tasteless and indigestible. It is because reabsorption has deprived it of all its soluble parts. Perhaps chemistry will inform us some day what has been abstracted and what has been left. The muscles are composed of fibrin and albumen, casein, creatine, and creatinine, urosic, acetic, and farinic acids, also a volatile adipose acid. All this is not taken up at once, but in definite proportions. The flesh, which has been thus drained, as it were, during a long abstinence, cannot be the same as in the normal state. We must also consider how reabsorption borrows from other sources that which the muscles furnish in such abundance. It reduces the parietes of the heart, the fleshy parts of the intestinal tube, the liver, the kidneys, and other glandular structures; it attacks the skin, and even the membranes of the eye. By a singular privilege, the nervous system alone

seems to remain exempt from its effects. When reabsorption has taken up all this it has still to add the mineral salts to the aliments so extracted. These are obtained from the skeleton; the bones of the cranium are reduced by bringing the two layers closer together, the medullary canals are hollowed, and the compact layers which form the walls become transparent. The collection of these mineral substances is not more difficult than that of the organic substances.

In a horse which had been subjected to total abstinence for thirty days the blood contained six times more mineral salts than is found in normal blood. An animal under total abstinence has not only the internal aliment of the carnivora, but also the excretions; the bile and the urine, which expel the incombustible matters which the respiration cannot destroy, resemble in the herbivora those of the carnivora. This is a fact which, since Magendie, has been ascertained by several other physiologists. Respecting the urine, the change was manifest in the animal in question. At the commencement of the experiment it was thick, sedimentous, and alkaline, as is usual in the solipedes. Carried to the point of ebullition, much carbonic acid gas was evolved; when cooled down, carbonate of lime and magnesia were deposited; hydrochloric acid caused effervescence, and afterwards crystals of hippuric acid were deposited. But after standing a few days there was a change both in the aspect and the character; it had become clear, transparent, and strongly acid; ebullition no longer caused the evolution of carbonic acid; and by rest carbonates were not deposited, nor was the hippuric acid replaced by uric acid; in one word, it had most of the characters of the urine of animals which are fed on animal substances. As long as the curious phenomena of the autophagia are accomplished regularly, as long as the reabsorption finds and can take up a sufficient quantity of aliment, respiratory and plastic, the temperature of the body remains the same, the blood is as abundant and even as rich, the lymph being as thick as in the normal state.

This is what has been observed during one month in the case of the first horse experimented on, seven weeks in a goose, and several months in a hedgehog. But there is a time when the scene changes. At a certain period the absorption is not active enough to collect the necessary quantity of aliments, or else they have not the requisite qualification. From that time the blood diminishes by one half, sometimes two thirds; it becomes poorer, particularly in cells and fibrine; loses its stimulating qualities, its sugar disappears; the lymph and the cells of the liver are divested of this

principle; afterwards the secretions stop, the sensibility becomes obtuse, the locomotion slow, and the temperature of the body lessens. Finally, the animal dies; physiologically, it dies in the same manner as after a long malady, and, without doubt, from analogous causes. There are, then, in total abstinence two distinct periods—one in which the animal is nourished regularly at the expense of its own substance, the other when it ceases to find in its own substance sufficient matter to maintain its temperature and renew the blood. These two periods, of unequal duration, have each their proper, very characteristic physiognomy, and there is between them a very important line of demarcation. When an animal is submitted to total abstinence, and so long as all goes on as in the first period, the hunger is not extinguished, and the faculty to digest and assimilate remains intact. If, now, with some precautions, the animal is returned to its usual diet, it recovers its strength by degrees, and soon repairs its losses; but when once its blood is no longer reconstituted, when once the temperature has been considerably lowered, the hunger seems appeased, it is extinguished in a vague feeling of sufficiency, the animal no longer looks for food, and if it is presented refuses it; or if, on the contrary, it takes it, the jaws perform their office with pain and difficulty, the salivary glands no longer moisten it with their secretions; deglutition is possible, but the stomach is in a torpid state, it is an inert bag, in which the digestive fluid is no longer secreted; the bile has no other properties than that of a fluid which has become simply excremental; the secretions of the intestines are nothing more than a mucosity—the waste of the epithelium. In one word, digestion can no longer be performed, or, if still performed, it is only to a very limited extent, and assimilation is no longer possible; in short, the animal is doomed to die, inanition follows, and whatever we may do it ends in the lowering of the temperature of the body, which is the first forerunner of death. This is a constant fact, observed by Chossat, and which I have had often the opportunity of observing in animals of different species.

All that has been stated has reference to the abstinence taken isolately; we must also consider it when connected with some malady, as it then becomes of the highest importance to the practitioner. In an animal suffering and deprived of aliment two causes of deterioration and destruction are at work at the same time on the organism, viz., the malady and the abstinence. These combined undermine it, and each of them in its own way attacks at once the animal powers and

the frame. If the morbid state is inflammatory, or simply febrile, it energises the work of destruction in the same manner as other stimuli; if accompanied by a vicious secretion or nutrition, or an abundant evacuation besides this, decomposition is in itself accelerated with great rapidity. In order to calm the inflammation and the febrile reaction which is the result of it, one is often obliged to resort to abstinence as a powerful auxiliary. This is, no doubt, very rational, and in a great number of cases is without danger; but it may sometimes kill as well as the malady. It will be understood that I am speaking of cases which demand long-continued abstinence. We must resort to diet as we do all other remedial agents. It is an antiphlogistic and debilitant, also an excellent dissolvent, which is to be properly and carefully employed; it is, if I may use the term, a therapeutic agent of which the doses must be carefully determined, according to the malady and the physiology of the patient. On the one hand, we must take into account the indications of the malady which we have to combat; and on the other, the exigencies of the organism; in a word, we must take care, in trying to kill the malady, that we do not kill the patient. Above all, it is important when we have to deal with an affection of long standing, to bear well in mind that the animal is under the influence of two causes of destruction. It is like a place besieged by two powerful armies, and which holds out for a longer or shorter time, according to the violence of the attacks or the provisions at its command. The medical attendant who only sees the malady regulates his indications on that alone. The man with tact sees at once the evil and the malady; he judges, so to speak, of the state of the besiegers and that of the besieged; he combines the indications with one another, and in this consists the great art of medicine.

(*To be continued.*)

ROYAL COLLEGE OF VETERINARY SURGEONS.

SPECIAL MEETING OF COUNCIL, HELD OCTOBER 25TH, 1865.

PRESENT:—The President, Professors Spooner, Simonds, Brown, and Gamgee, Messrs. Broad, J. C. Broad, Ernes, Greaves, Harrison, Harpley, Hunt, Lucas, Moon, Rose, Thacker, Withers, and the Secretary.

The PRESIDENT in the Chair.

The minutes of the preceding meeting were read and confirmed.

The *Secretary* laid on the table a copy of a work entitled 'The Principles and Practice of Medical Jurisprudence,' by Dr. A. S. Taylor. Also a work on 'Amputation at the Hip-joint,' by Mr. J. Sampson Gamgee, of Birmingham, which had been presented to the Library of the College.

It was moved by *Mr. Ernes*, and seconded by *Mr. Brown*—

"That a vote of thanks be awarded to those gentlemen for their kind presentations."—Carried.

The minutes of the proceedings of the Parliamentary Committee, together with the revised Bill, were submitted to the Council. The only alteration which the Committee deemed advisable was the omission of Clause VII. The draft of the Bill, entitled "The Veterinary Medical Act," was then read, and each clause carefully considered.

After a lengthy discussion, it was moved by *Professor Gamgee*, and seconded by *Mr. J. C. Broad*—

"That the minutes now read be received as the report of the Parliamentary Committee."—Carried.

The important subject of appointing a solicitor as the legal adviser in the prosecution of the Bill was next brought before the Council for their consideration.

It was moved by *Mr Ernes*, and seconded by *Professor Gamgee*—

"That Mr. W. M. Wilkinson, of 44, Lincoln's Inn Fields, be appointed the solicitor."—Carried.

At the suggestion of the *President*, it was determined that a circular be printed and sent to each member of the profession, along with a copy of the proposed Bill.

By order of the Council.

WILLIAM HENRY COATES,
Secretary.

WE think it right to append a copy of the proposed "Veterinary Medical Act," although each member of the profession may be in possession of one, knowing that our Journal is read by many not in the profession, whose interest and support may be of value to us as a body, and which we thus respectfully solicit.

VETERINARY MEDICAL ACT.

The object of the proposed Veterinary Medical Bill is to protect the public and the profession from the deception of persons falsely calling themselves Veterinary Surgeons.

By the Royal Charter granted in 1845 by Her Majesty to

"the Royal College of Veterinary Surgeons," it is provided that the members of that corporate body should thenceforth be recognised as a profession, and should "*solely and exclusively of all other persons whomsoever* be deemed and taken and recognised to be members of the profession or professors of the said art, and shall be individually known and distinguished by the name or title of Veterinary Surgeons."

Admission to the Corporate Body is obtained by examination, after a curriculum of study at the Royal Veterinary College of London, the Veterinary College of Edinburgh, or any other Veterinary College authorised as a school by the Queen's sign manual. In fact, the Royal Charter places the veterinary profession in the same position as the medical profession with regard to education and examination; and it requires to be supplemented by an Act of Parliament, in order to give its provisions the force of law, and to prevent those who are not members of the Corporate Body from, in future, falsely representing themselves as such. This is the simple scope of the proposed bill.

The Charter has now been in force for upwards of twenty years, and a large number of respectable and educated men have been admitted as veterinary surgeons under its provisions.

The beneficial effects of the Charter, however, have been lessened by the numerous uneducated persons who practise in defiance of its provisions under the name of Veterinary Surgeons.

It is not, however, intended to make the Veterinary Medical Act retrospective in its provisions, nor to prevent any one of those who have falsely assumed the name and profession of Veterinary Surgeons from continuing to practise and to call themselves as such.

It is, however, considered that, after the twenty years' notice given by the Royal Charter, the time has now arrived, when, in justice to the profession and to the public, all future encroachments upon the Charter shall be prevented, and that henceforth no one shall be permitted to practise under a falsely assumed name or pretence of being a Veterinary Surgeon.

It will be still left open to any one who can get practice to pursue his calling under whatever title he chooses, providing only that it does not involve the false representation that he is a duly educated and admitted member of the veterinary profession.

By the passing of an Act imposing penalties on any new persons who shall in future commit the deception complained

of, the course of education which is prescribed by the Charter as necessary for the veterinary profession will be largely encouraged, to the manifest advantage of the country. Those also who have been at the pains and expense of educating themselves and of passing the examination will not be obliged to compete as at present on equal terms with the ignorant and uneducated. A longer continuance of the present system of toleration would seriously discountenance the course of education prescribed by the Charter, and hold out a premium to ignorance and incapacity.

England is behind many other countries in not efficiently protecting veterinary education.

In France it is illegal, and under heavy penalties, for any one who has not obtained a diploma to assume the name of a Veterinary Surgeon.

In Belgium, where veterinary schools are comparatively new, a law passed in 1850 prohibits any one from practising without a diploma.

In Holland a similar law is in force.

In Saxony it is provided that only those who possess diplomas shall treat the maladies of the domestic animals.

In Bavaria no person can practise the veterinary art without a diploma.

In Baden also, and in the small states of the German Confederation, there are penalties against the unauthorised practice of the veterinary profession.

By order of the Council of the Royal College of Veterinary Surgeons.

GEORGE VARNELL, *President.*
W. H. COATES, *Secretary.*

10, RED LION SQUARE, LONDON, W.C.

PROPOSED FORM OF VETERINARY MEDICAL BILL.

WHEREAS, Her present Majesty, by Royal Charter, bearing date the 8th day of March, in the seventh year of her Reign, did for herself, her heirs and successors, grant unto Thomas Turner, and to certain other persons therein named, together with such others as then held Certificates of qualification to practise as Veterinary Surgeons, granted by the Royal Veterinary College of London, or by the Veterinary College of Edinburgh respectively, and such other persons as respectively then were and might thereafter become Students of the Royal Veterinary College of London, or of the Veterinary College of Edinburgh, or of such other Veterinary College, corporate or unincorporate, as then was or thereafter should be established for the purposes of education in Veterinary Surgery,

whether in London or elsewhere in the United Kingdom, and which Her Majesty and her successors should under her or their sign manual authorise in that behalf, and should pass such examination as might be required by the orders, rules, and bye-laws which should be framed and confirmed pursuant to that Charter, should, by virtue thereof, be members of and form one body politic and corporate by the name of "The Royal College of Veterinary Surgeons," by which name they should have perpetual succession, and a Common Seal, with full power and authority to alter, vary, break, and renew the same at their discretion, and by the same name to sue and be sued, implead and be impleaded, and answer and be answered unto in every Court of Her Majesty, her heirs and successors and be for ever able and capable, in the Law to purchase, receive, and possess to them and their successors any goods and chattels or other personal property whatsoever, and should have full power and authority to sell and dispose of any goods and chattels or other personal property so to be by them acquired, and to act and do in all things relating to the said body politic and corporate as fully and effectually to all intents, effects, constructions, and purposes whatsoever, as any other of Her Majesty's liege subjects, or any other body politic and corporate in Her Majesty's United Kingdom of Great Britain and Ireland, not being under any disability, might do in their respective concerns; and Her Majesty did further declare and grant that the Veterinary Art, as practised by the members of the said body politic and corporate, should be thenceforth deemed and taken to be and recognised as a profession, and that the members of the said body politic and corporate, solely and exclusively of all other persons whomsoever, should be deemed and taken and recognised to be members of the said profession or professors of the said art, and should be individually known and distinguished by the name or title of Veterinary Surgeons.

And in the said Charter were contained certain regulations for the conduct and management of the affairs of the said Corporation.

And whereas it is expedient to encourage the progress of the Veterinary Art, that such of Her Majesty's subjects as may from time to time require Veterinary Medical aid should be enabled to distinguish the members of the Royal College of Veterinary Surgeons from others who have not passed the examination requisite for entitling them to become members of the said College, and who are not members thereof:

BE IT ENACTED by the Queen's Most Excellent Majesty, by and with the advice of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same, as follows:

I.—This Act may, for all purposes, be cited as the Veterinary Medical Act.

II.—This Act shall take effect from the First day of October, One thousand eight hundred and sixty-six.

III.—Any person, not being a Member of the said Royal College

of Veterinary Surgeons, who shall, after the time appointed for this Act coming into operation, take or use the name or title of Veterinary Surgeon, or who shall falsely represent himself to be a Member of the said College, or who shall use any other name or title with intend to lead, or whereby the public may be led to believe that he is a Member of the said Royal College of Veterinary Surgeons, shall, upon a summary conviction for any and every such offence, pay a sum not exceeding Ten Pounds, nor less than Five Pounds.

IV.—Provided, nevertheless, that this Act shall not affect any person who shall, prior to the First day of October, One thousand eight hundred and sixty-six, have assumed the name or title of Veterinary Surgeon, and at the period last mentioned shall be actually in practice as such.

V.—Any penalty to which, under this Act, any person is liable on summary conviction of any offence, may be recovered as follows (that is to say): in England, in the manner directed by the Act of the Session holden in the eleventh and twelfth years of Her Majesty, Chapter XLIII; and in Ireland, in manner directed by the Petty Sessions (Ireland) Act, 1851; or any other Act for the time being in force in England and Ireland respectively for the like purposes. And any such penalty may, in Scotland, be recovered by the Procurator-Fiscal of the county, or by any other person, before the Sheriff or two Justices, who may proceed in a summary way, and grant warrant for bringing the party complained against before him, or them, or issue an order requiring such party to appear on a day, and at a time, and place, to be named in such order; and every such order shall be served on the party by delivering to him in person, or by leaving at his usual place of abode, a copy of such order and of the complaint whereupon the same has proceeded; and upon the appearance or default to appear of the party, it shall be lawful for the Sheriff or Justices to proceed to the hearing of the complaint, and upon proof or confession of the offence, the Sheriff or Justices shall, without any written pleadings or records of evidence, commit the offender, and decree him to pay the penalty named, as well as such expenses as the Sheriff or Justices shall think fit; and failing payment, shall grant warrant for the recovery thereof by pounding and imprisonment, such imprisonment to be for such period as the discretion of the Sheriff or Justices may direct (not exceeding three calendar months), and to cease on payment of the penalty and expenses.

VI.—Any sum or sums of money arising from conviction, and recovery of penalties as aforesaid, shall be paid to the Secretary for the time being of the said Royal College of Veterinary Surgeons, for the use of the aforesaid College.

The *Sheffield Independent*, alluding to this subject, says, "The Council of the Royal College of Veterinary Surgeons intend, during the next session of Parliament, to apply for an Act to prevent the use of the title of veterinary surgeon by

charlatans or quacks. At present any groom, gardener, druggist, horsebreaker (and of such many are practising as veterinary surgeons), is at liberty to assume the title which alone belongs to the properly qualified. Our own town and neighbourhood is no exception to the rule. Of the score or more who call themselves 'veterinary surgeons,' not one half have been educated for the profession, but have assumed the title without having any claim to it, and because the law cannot touch them. It is evident that both the profession and the public need the protection of the legislature, and we shall be glad to find them receive it at their hands."

THE WEST OF ENGLAND VETERINARY MEDICAL ASSOCIATION.

OFFICIAL REPORT.

The second Quarterly Meeting of this Association was held at the Athenæum, Exeter, on Friday the 20th October.

Present. — W. Raddall, Esq., President, in the Chair. Professor Morton, residing at Dawlish, Honorary Associate; Messrs. Bodington, of Cardiff; T. D. Broad, of Bath, and J. F. Bickford, of Kingsbridge, Vice-Presidents; E. Draper, of Exeter; J. J. Collings, of Plymouth; J. D. Gregory, of Bideford; J. P. Heath, of Exeter, and R. H. Dyer, of Torquay, Honorary Secretary and Treasurer.

The *Chairman*, in opening the meeting, said he had great pleasure in seeing so many friends present that day, especially as some had come from a great distance; he hoped that this society would go on prosperously, and at their next meeting he should have the pleasure of seeing a great many more members added to their number, and the Association in a flourishing condition. He then called on the Secretary to read the minutes of the meeting, held at Plymouth, which, having been done, they were confirmed.

Mr. Bodington then read the following Essay on

THE PAST, THE PRESENT, AND THE FUTURE OF THE VETERINARY PROFESSION.

Mr. President, Vice-Presidents, and Gentlemen.—I can scarcely reconcile myself to the position I now have the honour and privilege to occupy, and that for two reasons: 1st, because I remember a promise given to our Secretary at our meeting at Plymouth by one more advanced in the profession, and capable of occupying your time to greater advantage and edification at the present moment

than I am. And, secondly, because I well know and feel how utterly inadequate are my abilities for the duty before me. Had our friend Mr. Bickford fulfilled his promise, I should not have had the pleasure of addressing you to-day. However, gentlemen, rather than a want of interest in the welfare of this Association should be found to exist even in its most humble member, I, at the last moment (by invitation of our esteemed Secretary), have ventured to undertake the duty, and must beg of you kindly to bear with me while I address to you a few remarks upon the Past, the Present, and the Future of the Veterinary Profession.

I am aware that, by choosing this subject for my address, I have in some degree laid myself open to censure, having thereby infringed upon a bye-law which provides, that *all* subjects brought forward for discussion shall be strictly scientific. To the charge I plead guilty; but, although fully concurring with that bye-law, and believing it likely to elevate the tone and character of our debates, it struck me that upon this, the Society's first assembling in its *entirety*, my subject after all would not be altogether inappropriate, or without interest. It is not my intention to enter into historical detail—that would be treading a path already traversed; neither, even *were* it desirable, would our limited time admit of it. My object is rather, by an unprejudiced and faithful inquiry into things as they *were*, to awaken in us a spirit of self-examination as to what *we really are;* whether or not we *are* what we profess to be, and thereby to fix upon our minds the important and incontrovertible fact, that the *future* of our profession must most inevitably depend to a *great*, *very* great extent upon what *we now are*. It is only by a bold, impartial, and truthful scrutation of *past* errors that we can hope to eradicate them *now*, and advance our position in *future*. The work of to-morrow is one in which every one can engage. It is as wide as humanity. The time has long passed in this country, except in the case of a few antediluvians who will soon be as extinct as the megatherium and the dodo, when knowledge was considered dangerous. Like free trade now, every one sees and acknowledges that it is good. All sorts of men are vieing with each other how still to increase its influence and extend its operations. Each one is anxious to leave the world wiser than he found it; and in a thousand ways men are trying to dissipate the dense fogs of ignorance, and to prevent them from ever again visiting this land. The cry of the Laureate is now repeated by thousands:—

> "Let knowledge grow from more to more,
> But more of reverence in us dwell,
> Till mind and soul according well
> May make one music as before,
> But vaster."

I know well there are many persons who have a decided objection to look upon things gone by, and whose undeviating cry is "Forward." I say "Forward" too, but I cannot help thinking that he who cannot improve the *present* by sound and wholesome reflection upon the

past, must be unhappily laden with too much self-esteem, and too little moral courage and enterprise, ever materially to aid in perfecting the *future*. It is said, "to be always working on the confines of the known, is inseparable from making some incursions upon the regions of the unknown;" and that, "where many things are done, also some things will be done well. Mediocrity will rise in excellence, and the fresh consciousness of power to make progress will naturally lead to progression."

It behoves us, however, to be careful lest, in our desire to eschew the *evil* of the past, we overlook the good; for it must not be supposed the *past* is only to be viewed as an epoch of error. That would be wrong indeed, and an error on our part, and an injustice to some of the brightest intellects that have adorned our profession in days gone by, and whose earnestness, zeal, and attachment to the cause of progression, together with their literary bequeathments, are examples we might well copy with advantage in this our day. It is well, I think, sometimes to look back, it may be, to smile upon the follies, and reject the ignorance of mere pretenders in the art, or to review the extraordinary admixture of eloquence, superstition, and infatuation of the ancient Roman authors Columella and Pelagonius; the total absence of science in a Chiron and Absirtus; or, it may be, to meditate with mingled feelings of astonishment, curiosity, and profit, upon the works of a Vegetius Renatius, or carefully to search the enormous volumes of a Snape. These, with a Solleysell, Blundevil, a Markham, and De Grey, and many others, are they who, from the fourth to the seventeenth century, were at different times engaged in upholding and progressing the art of *Farriery*. These again were succeeded by Osmer, Gibson, Moorcroft, Stubbs, Clarke, and so on. Now, any one who has read the earliest of these authors, however he may be inclined to smile at some of the absurdities of their *curative* agents, must, I am sure, be forcibly struck with the great amount of common sense and foresight displayed in their *preventive* measures, and which at this particular time—yes, at this very day—cannot be despised. It seems to say so much to us, at a time when all our talent has been on the stretch, and we have taken so much credit to ourselves for the means put in force for the prevention in this country of the spread of that direful pest the cattle plague, that I cannot refrain a quotation from one of the ancient authors on Farriery, who says in his preface, "Besides several other motives that might be assigned for attempting to translate this ancient author (Vegetius Renatius of the fourth century) the present distressed state of many parts of the kingdom, by the great havoc that an infectious distemper has made, and still continues to make amongst the horned cattle, and the danger of its spreading further, and passing from one species of animal to another, will, it is hoped, be sufficient apology, since it cannot but give satisfaction to the curious to observe the method which that wise people the ancient Romans made use of to check the progress of infectious distempers amongst their cattle. It is very short, indeed, and so easy to be put in practice, where the

pasture grounds are not too much confined; and it is so very like the method enjoined to be put in practice at present in this country that it must give a singular pleasure to those who formed those regulations appointed to be observed for preventing the spreading of the distemper, to find that they have almost hit upon the very same things which this author recommends, and which, no doubt, were strictly observed by a people extremely attentive to prevent any public calamity, and whose example in this particular, and in many others also, is worthy the imitation even of the wisest and greatest nations. As it may give some trouble to the reader to search for these things scattered in different parts of the book, I have," he says, "put them together and inserted them here (that is, in the preface), that they may be the more obvious to the eye of any one who shall vouchsafe to look upon the first pages as a thing not unworthy of his attention." Then follow the means spoken of, viz.—

"Whenever any infectious distemper began to show itself, they immediately changed their pastures, and removed their cattle into a remote place, thinking that change of air was of very great benefit, and they carefully separated the sick from the sound, and took all manner of precautions to prevent all communications between them, and never introduced any sound cattle into those places where the sick had been, accounting that all their stables, stalls, cribs, ponds, and wells where they drank, and the ground where they lay upon, were full of the infection; and whenever any of their cattle died, they presently buried them deep under ground, and suffered none of the sound to come near that place where they were buried, reckoning that the smell of the dead, no less than the breath of the living, contributed to spread the infection; and that not burying them *deep* under ground, had the same bad effect as not burying them at all.

"There seems to be one remarkable difference," he says, "in their management, that it does not appear that they ever knocked any of their sick cattle on the head, but kept them carefully by themselves, and gave them a fair chance for their lives, by continuing to administer medicine to them; whereas the contrary method seems to despair of any good effect at all from physic, and to pronounce it of no use in all infectious diseases." He continues: "This method of cutting off all communication with places infected seems to be reasonable and just, and has had so good effect when *impartially* pursued, that the wisest nations have adopted it, and put it in practice, when any infectious distemper brake out either amongst man or beasts, but in no place is it executed with so much vigour, impartiality, and good order, as in the state of Venice, where they do not *wait till the infection begins*, but they are presently alarmed even by *distant reports*, and use all manner of precautions against it, even while at a *great distance from them;* and as they have *standing regulations always in force*, ready to be put into execution, upon the *very first order*, there is no mischief can arise from *irresolution* and *loss* of *time* in *deliberating;* but upon the *least suspicion everything* is *instantly* put in motion; nor is the

execution put into the hands of such as are likely to be tempted to be partial or remiss in the same; nor is it made the business only of a few, but when the danger is apparent, all ranks of persons whatsoever are obliged to give their attendance and assistance by turns, in such places as the magistrates then see proper to appoint; and thus it becomes the business of the whole community; and the common people who in some countries are too apt, for the sake of present gain, to run the risk of bringing ruin upon themselves and others; yet in that country (Venice) are, by a necessary and wholesome discipline, brought to such a habit of obedience and submission to the will of the magistrates of health, that it rarely happens there are any presumptuous offenders, by which means the health both of man and beast is better secured there than in other countries, where, perhaps, the regulations may be the same, but not executed with so much exactness, impartiality, and severity."

Now, gentlemen, it would be easy to quote passages from many other authors of the age I call "the *past*," which would clearly show that, in some respects, we are not so far advanced in this our age—"*the present*"—as will entitle us to look upon our forefathers with disdain, or authorise us to discard their literary productions. If we carry our investigation only a little further, we shall again find how much *we* owe to days long since passed, for the advancement of our more scientific knowledge; and when we take into consideration the almost insurmountable difficulties under which many of the authors of the *past* laboured, it is, indeed, wonderful they accomplished so much. To go back to the quotation I have just read, does it not display to an eminent degree an entire knowledge of the vagaries of contagious and malignant disorders? Nay, I will go still further, and ask, does it not in some points even excel our orders and measures adopted at the present day for the self-same purpose? And when we reflect that this was the work of the *fourth* century, more than 1400 years ago, what have we to boast of? And may we not learn something by reflection of the "*past?*" Should it not stimulate us to acts of progress? Be not afraid or too proud to look back; but rather do so, and do it with an unprejudiced mind. Go to the task with a mind *wishful* for *improvement*, rather than of *unwholesome criticism;* and I will venture to assert, you come away not disappointed, but aroused to fresh vigour and a determination to do all in your power to elevate the profession you have adopted as your "all in all." Make it your *all in all;* and then there is not any doubt of your being an approved and useful member of it. And should difficulties arise, be not dismayed; rather throw fresh and more determined zeal into the cause; ever remembering your success depends upon your own exertions; and, "Let nothing be lost that it is possible to find by a diligent search."

Now, let us return to the second period of the "past," I mean from the seventeenth to the eighteenth century, a period in which we as a body must be deeply interested, and one in which a new light dawned upon the art of farriery, and in which also our child

was christened, receiving through her sponsors the name she now bears, "The Veterinary Profession." In 1791-2 it was that our first school (the foundation upon which our present college is raised) was opened for the reception of pupils desirous of being instructed in the veterinary art. Charles Vial de St. Bel was the promoter and founder, as well as the first professor of what was then called "The Veterinary College of London." Many were the difficulties and the oppositions from within and without that daily surrounded this our first sponsor; and however much he might lack that thorough anatomical and physiological knowledge possessed by others of later date, yet he conquered many obstacles by his enterprise and ingenuity, coupled with his indefatigable exertions for promoting the interests of the undertaking to which he had become so attached that his entire future prospects were involved in it. And although his career was short indeed (he died in 1793), yet we cannot but feel grateful for the name he gave us, and his being the first to write that name, and our claim of right to it, on the first page of our family book. Certainly much had now been done, but much still remained to be done; and then, as in all succeeding ages, men were soon found ready to engage in a cause they considered worthy their talent and labour. So we find St. Bel was soon followed by a Coleman, and a Moorcroft, and a Sewell, as immediately connected with the National Veterinary School. From this time to the *present*, men of various shades of learning appeared upon the stage, and at this period, also, our veterinary literature was increased, advanced, and improved, more than at any other. We had now as it were suddenly merged from the times of ignorance and superstition, and were expected to give a reason for "the hope that is in us." Time would fail to tell of *all* who aspired to the title and honour of authors. Amongst them were Prosser, Lawrence, Osmer, Clarke, White, Boardmen, Peale, and Wilkinson; these men, from the time of St. Bel's death, to about 1820, embodied in their writings almost every subject connected with their art—general anatomy, and the treatment of diseases generally. Some, however, directed their attention to particular subjects, confining themselves to one or other organ of the body, its anatomy, diseases, and treatment; one to the art of shoeing; another to veterinary pathology; and another to veterinary pharmacy, and so on. Many of the productions of these authors were no doubt the fruits of enormous labour, and necessarily involved a fearful amount of self-denial and perseverance; and yet, thankful as we are bound to be for these helps, these *great* helps to our advancement, it cannot be gainsaid that many of them are utterly worthless, and better they had never been written. Errors even in this period were committed, and of such magnitude, that it has already cost and will continue to cost our teachers, practitioners, and authors of the present day, almost endless application to eradicate. This is peculiarly the case in *our* profession, because the void was so great between the committal and reception of those errors and their connection and rejection. But, on the

other hand, we can look back upon this period with some degree of pleasure and profit. Many of the discoveries then made, and the doctrines promulgated, were worthy of admiration; and to this day, and in the future, must be looked upon as a starting point to eminence; and the alphabet of all future aspirants to fame. It was the period when anatomy, physiology, and pathology of domesticated animals, first opened up their claim and importance to our notice. It was through our authors of this day that these sciences made their first demand upon our attention and study, and it was by the skill and perseverance of the men of this day that those demands were listened to, received, and propounded. The days of charms and charlatanism had passed, and animals were now to be treated on true principles of science and education. All honour to the names of those who were the first to bring such things to pass. We are, thanks to them, no longer called upon for such medicines as the following, called a conglutinating plaster, to make which you are ordered to take—

Four oz. of storax, 3 oz. gum ammoniac, 2 oz. of deer's marrow, 6 oz. of glucine oil, 3 oz. of the oil of cyperus, 3 oz. of bull's tallow, 4 oz. of turpentine rosin, 3 oz. of the fat of a bear, 4 oz. of the fat of a lion, 3 oz. of bee glue, 6 oz. of old oil, 1 pound of axle-tree grease, 1 pound oil of savin, 3 oz. of opoponax and galbanum. These boiled together are said to form a most wholesome ointment.

Neither are we expected to charm away the diseases of our patients; and yet such absurd practices appear not to have entirely been eradicated by science even now. About six months ago, I was called upon to attend a cow the property of a milkman and a small farmer, named Davies, distant from me about half a mile. She was suffering from canker of the foot. I treated her, and in the course of a few days she quite recovered. Davies called to pay my bill, when he said to me, with all the confidence imaginable, "Do you know, sir, how *I* cured that cow at last? It was this way; I dug a square turf, of certain *dimensions*, *precisely* at sunset, and made the cow put her foot upon the hole, every day *precisely* at sunrise; then I hung the turf on the hedge, and as soon as the turf disappeared, the cow recovered." So much for the superstition of 1865, which no one scarcely would credit.

We now come to the period I call the *present* of our profession. What shall we say of it? Shall we say it is a period of extraordinary advancement? Or can we say the strides *we* have made are in comparison greater or as great as were made in one particular period of the *past?* Now, from 1823 to this day, there has, undoubtedly, taken place a complete twilight and revolution in the veterinary medical world. Among the foremost of our authors of this age, we have those of Blaine, Youatt, Percivall, Cherry, Turner, Spooner, and Vines, all of whom have deservedly earned for themselves a reputation as long-lived as the world. I say, they *deserve* the reputation they have accorded them. Have they not done for us what others left undone? Have they not supplied us at this

time with scientific implements, the consequences of untiring a unflinching exertion for the cause they espoused, whereby we ha been enabled so successfully to fight the battle we had been s many years engaged in? And if to them we add the names of a Morton, a Simonds, a Varnell, a Gamgee, and a few others, we shall have heard of those who have officered us not only in battle, but brought that battle to a successful issue. The victory is ours. We are fairly loosened from our bondage. We are freed from the intrigues of those who would for ever hold us in chains of uselessness. Let us prove ourselves worthy of our freedom, by acting as men fit to be trusted with the duties imposed upon us. As scientific knowledge, deep and undeviating research, and *combined* efforts, have been the instruments whereby we *conquered;* so they, and they alone, must ever be the source on which we can hope to stand our ground, or be what we profess to be; but we must not rest here. *This* is a dangerous period. Let us not imagine that, because we have passed through the fiery ordeal from the quack to a membership of the Royal College of Veterinary Surgeons, that we are safe, that *all* is *now* done. This is, indeed, a fatal error. But, gentlemen, fatal and disastrous as it really is, it is a common one in this our day. Nay, I say it fearlessly, it is *the error of the* day; it is *the retarder* and the *lagger* we have to fear most, and shall find the greatest difficulty in throwing off. Is it not so? Do not those of us who are anxious and concerned about our present and future condition daily find it so? Else why the lethargy and supineness as exhibited in the welfare of this very society we are here to-day to support? Are we then, I ask, are we in reality what we profess to be? Are we what we would wish our friends and the world at large to think us, and give us credit for? I answer, in some respects we are. But, alas! we must confess, in others we fall very short.

Ours is peculiarly an age of progress. It is true we are a body corporate; we have our colleges, and our professors of high learning and eminence; and our scholastic course is of a higher caste. And it is equally true that many men of bright intellect have emanated from our schools, and are ornaments, living ornaments, to our profession. But of what use is all this if the *majority* of our rising brothers, as soon as launched into business, lose all interest in the profession beyond just what is of personal advantage, and gradually lapse into a state of indifference as to the "*future?*" Yet are there not hundreds now doing so? Science *has* done much, and is daily doing *much*, but of what use is it to put into the hands of *idleness* and *indifference*, weapons which can only be used successfully by the diligent and watchful combatant? Would that the same questions were put to us on *our* return from the battle-field of progressive science, as was put to Julius Cæsar by his friend Anthony, as to *his* success. Our answer may be like his—

"I saw, I conquered."

The question here arises, Has our advancement in this age *really*

ıe us benefit? Have we not, too many of us, rested upon the nding such onward movement has given us, thinking that, having ıined so much, or it having been obtained for us, *we* have nothing ıore to do? It is impossible to stand still; either we move forvard or backward: which are we doing? These are questions each should put to himself, and let each honestly answer them. Self-examination is, I know, not always an agreeable task, but it is undoubtedly one, if conscientiously carried out, from which great good must accrue—

"What speak I more than I this moment feel?"

To what source must we look for strength to hold our present position, and advance the *future? We* are concerned with both. It is not our schools and colleges, our professors and teachers alone, on whom we have to depend. It is dependent upon the assistance and aid we, as a body, as a whole, give to them and ourselves. Our conduct, our knowledge, our union, in the bonds of skill and friendship; this, and this alone, is the safeguard of what we have. This, and this only, is the foundation upon which a prosperous *future* can be based. Let us, then, "be wise to-day; 'tis madness to defer."

Be we as desirous as we may to receive all that the legislature can give, and though we obtain all we desire, it will avail us nothing unless *individually* we legislate for ourselves. I have heard many a one say, "the *public do not receive us as they should.*" I can only say, after more than twenty years' experience, I believe the public appreciate any man who, by his talent and good conduct, renders himself worthy. Let us prove to them by our works that we do really possess greater skill than the quack and empiric; and, depend upon it, the public will be willing to accord to us all the merit we deserve. The legislature can never make us a wise, skilful, and prosperous body; it is for us to make ourselves all this; and the legislature is merely the instrument through which our superiority is publicly acknowledged.

Having said so much upon the *past* and the *present*, let us not forget the *future*. It, too, in a great measure is ours. Are we not training those who will be the possessors of it, so to speak? Then it is our duty to see they are made fit for the appointed duty. It is, I say, for us to see that they are fitted for the task before them. It may be some here present may be so engaged. Let us ever remember our responsibility; and by our own conduct and practice show them what is expected at their hands, and teach them that, as they rise up, more is daily expected. Let us one and all, young and old, never rest satisfied with our labours until we bring our greatest enemies to confess that we are not only what we profess to be, but what we *ought* to be. Let us not imagine we know enough.

"Learning refines and elevates the mind."

In conclusion, gentlemen, "the diffusion of knowledge is ever commensurate with the progress of discovery. As the boundaries

of science are enlarged, the craving of the general mind for the acquisition of it is stimulated, and this appetite is rendered more irresistible by the contemplation of the vast benefits and augmented powers conferred upon the arts of life by every fresh advance in scientific research. Who that beholds the prodigious extension given to metallurgic industry by the discoveries of mineralogists and chemists, can resign himself to absolute ignorance of the materials of which bodies are constituted? Who that contemplates the marvellous history of the earth revealed by geologists can rest in contented ignorance of the science which has taught us to interpret the characters written upon its crust, in which its state, myriads of ages before it became the habitation of the human race, is recorded?

But of all the stores of knowledge thus spread before us, there are surely none which should more pique our mutual curiosity than those which open to us a view of animated nature. In these it is we have, so to speak, a selfish interest."

The subject-matter of the 'Essay' hardly admitted of discussion. *The Secretary* subsequently observed, it will be noticed by those who may read Mr. Bodington's paper, that in some things, even now, we are not much in advance of former times, especially as it regards charms and superstitions, which are still in existence in many places. It might have been supposed that in this enlightened age, with our high state of civilisation, when science has done so much to remove these false impressions, and reason has proved them to be without any foundation whatever, that everything pertaining to superstitition would be as a thing forgotten. But it is nevertheless notorious that such practices, as related by Mr. Bodington, and some even of a graver nature, still prevail, and that more especially in the sister kingdom. It may not perhaps be generally known, that the Lord of Curraghmore has in his possession "the murrain stone." It is a flattened circular piece of glass, "doubly convex," which was found at Jerusalem something like 500 years ago, and has been in the family from that time to the present. Any person requiring it must bring a respectable security for its safety before it is parted with, for as many hours as its charms are needed. If a man has a sick cow, application is made for the stone to the person whose business it is to take care of it, when a sufficient guarantee being sent to the holder of the charm, it is taken to the priest, who blesses it, and it is then taken to the sick cow, when a cure is effected in "double quick time." There are other and more absurd practices than this adopted in Ireland, which could be mentioned were it necessary.

Mr. Bickford stated that the reason why he had not fulfilled his promise arose from an affection of his throat, through which he had lost his voice, and his medical attendant had insisted upon his talking less; to which he humorously added—and think more.

The President, in a few complimentary words, moved a vote of thanks to the author of the 'Essay,' for the able manner in which the subject had been handled by him.

Prof. Morton, in seconding the motion, said, that having been honoured by being elected an honorary member of this Association, and having felt a warm interest in the advancement of provincial veterinary medical associations ever since the proposal for their formation was first made by their president, he experienced great pleasure in being present at this their second meeting.

It cannot but be that, when intelligent members of a profession voluntarily meet together for the consideration of subjects in which they all have a common interest, good must result. They compare notes, certain questions affecting them are ventilated, and difficulties are met and overcome. The present time he looked upon as constituting an important era in the veterinary profession. The fatal malady existing among our herds and flocks would tax their energies, and call forth all the professional abilities they possessed. He sincerely hoped they would be found equal to the emergency. This would advance them in the estimation of the public; and if a means of cure may not be discovered by them, surely methods to check the progress of the disease, and of prevention, may be devised, which would ultimately eradicate the plague. He need not, he was sure, speak of the necessity of union among the members; and although not so many were present to-day as he had hoped to meet, nevertheless there was no cause for despondency; step by step they must be contented to advance, and in the end they would succeed. Man's works are never perfect at the beginning. Perseverance should be their motto. Equally unnecessary was it for him to comment on probity, forbearance with each other, and an honorable course of conduct, for as communities are made up of individuals, so on the comportment of each will the estimation of the mass depend, and its *status*. It has been argued, that if a hundred *intelligent* men, or a hundred *rich* men, or even a hundred *free* men were taken, there is no one person of sense who would venture to say he had sufficient data for calculating their success or happiness from these elements alone; but, on the other hand, there is no man who would not take any odds, that of a hundred *honest*, *industrious*, and *upright* men, the vast majority of them were certain to do well. He thought he could not better close these few remarks than by repeating the wish of Professor Phillips at the late meeting of the British Association for the Advancement of Science:—"Long may such union last, the fair alliance of cultivated thought and practical skill; for by it labour is dignified, science fertilised, and the condition of society exalted."

Some routine business was then proceeded with, the first being the consideration of a code of laws for the government of the Association, which had been prepared by the Secretary. He observed that the laws he was about to submit for their approval were not entirely his own. The honorary secretaries of the Yorkshire and Lancashire Societies had each kindly furnished him with a copy of theirs, and they were alike. These he had taken as his starting point; and by framing them as he had done, with the addition

of a few original ideas of his own, he had, he hoped, produced such a code as would be likely to suit their requirements. Each law, or rule, was then read and put to the meeting, *seriatim*, for adoption. One or two of them excited a little discussion and received amendments, but all were passed in due course. One of these bye-laws runs somewhat thus: "None but members of the Royal College of Veterinary Surgeons will be admitted as members of this Association."

A few names were added to those already enrolled as members.

The Chairman said, before dissolving the meeting, it was one of their rules that some member should announce his intention to favour them with an Essay for the next meeting.

Mr. Gregory, of Bideford, volunteered to give them one, which he said would be on the rinderpest, if the anxiety evinced on that subject had not died out.

The President then called upon the members to determine where their next meeting should be held.

Mr. Bodington moved that Bristol be the place selected, which was seconded by *Mr. Collings*, and unanimously agreed to; the third Thursday in the month of January, 1866, at one o'clock, being the day and hour chosen.

Nothing more being before the chair, votes of thanks were cordially given to the President and Secretary, and the meeting broke up.

The members afterwards dined together. Mr. Raddall occupied the chair, and Mr. Broad the vice-chair. This last-named gentleman having to return by a certain train, left immediately after dinner, when Mr. Bodington succeeded him as vice-chairman. The loyal and patriotic toasts were done justice to, and the continued prosperity of the Royal College of Veterinary Surgeons, with a few others, given, the remainder of the evening being passed in friendly and professional conversation.

R. H. Dyer,
Sec. and Treasurer.

NORTH OF ENGLAND VETERINARY MEDICAL ASSOCIATION.

OFFICIAL REPORT.

The usual Quarterly Meeting of the above Association was held at the Crown and Thistle Hotel, Durham, on Friday, October 20th, at 1 o'clock, p.m.

Mr. C. Hunting, the President, in the Chair.

The following members were present, viz.: Mr. C. Hunting, President; Messrs. Scott, Hunter, Farrow, Dudgeon, Wilkinson,

Stephenson, Foreman, Mann, Hedley, Allison, Hardy, Reed, Brydon, Vasey, and Hutchinson.

After the minutes of the last meeting were read and confirmed the election of office-bearers for the ensuing year was proceeded with, when the following members were chosen:

Mr. N. E. Wilkinson, *President.*

Messrs. Stephenson and Farrow, *Vice-Presidents.*

Messrs. Hunter, Foreman, Scott, Allison, Hardy, and Hedley, *Councilmen.*

Mr. Dudgeon, *Treasurer.*

Mr. Hutchinson, *Hon. Secretary.*

Mr. Vasey, from Staindrop, was admitted a member.

Mr. Wilkinson then took the Chair, and Mr. C. Hunting read the following instructive paper "On Rinderpest," which was listened to with marked attention by all present:

GENTLEMEN,—Most of you are aware that the subject chosen at our last meeting for discussion to-day was the pathology and treatment of that very obstinate disease "canker" of the horse's foot; but in consequence of the sudden outbreak and rapid spread of the "cattle plague," the gentleman who promised that paper wrote some five weeks since, asking me to substitute one on the "rinderpest," and, considering the importance of the subject to us professionally, I at once acquiesced in Mr. M'Gregor's wish.

To facilitate description, I shall discuss my subject under three heads:

1st. What is "rinderpest," and where did it come from?

2nd. Symptoms, and *post-mortem* appearances.

3rd. The remedial and preventive measures generally adopted, and their success.

"Rinderpest" of the Germans, "Steppe Murrain" of the Russians, the "Typhus Contagiosum Bovin" of the French, and the Cattle Plague of the English, are terms used by the several nations mentioned to designate the same malady. Of all of them I consider the "Typhus Contagiosum Bovin" of the French the most suggestive, as in it is expressed two of the leading characteristics of the disease, viz., its contagious nature and its typhoid type.

This disease may, in fact, be truly called the typhoid fever of the ox; but it is not only more contagious and more fatal than its counterpart in man, but more so than any other disease affecting man or animals. "Rinderpest," although new to the present generation of Englishmen, is a very old and well-known disease in almost every other country in Europe; certainly there is no other malady which affects the bovine race which has received a tithe of the investigation afforded to this one. Commissions appointed by the French, Russian, Prussian, and Austrian governments, composed of men the most eminent in both the medical and veterinary professions, have spent years in investigating this most malignant disease. In our own country, long before the disease reached our shores, it was very closely studied by that eminent pathologist, Dr. Budd, of Bath,

whose very able essay on it was read before the British Medical Society this year. It was also investigated by Professor Simonds and W. Ernes, Esq., as Government Commissioners, in 1862, and a most elaborate report by the Professor of Cattle Pathology at our "Alma Mater" was published soon after his return from Silicia, Gallicia, and Poland.

A most able and complete history of "rinderpest" is also given by Professor John Gamgee in his 'Dairy Stock,' published in 1861, on reading which I was much struck with the correctness of the symptoms given as compared with those developed in the cattle that I occasionally visited at Hartlepool; and here I think it is due to Professor Gamgee for me to state that what has come to pass he very clearly prognosticated some years ago. In a letter to myself, dated September 20th, 1862, he writes as follows:

"My dear Hunting,—You have no conceptions of the frightful ravages committed by pleuro-pneumonia in this country and in Ireland; thousands are still dying annually from this disease alone, quite as bad as when we investigated the disease in the London cow-sheds in 1849-50, and yet nothing is done to prevent its spread, and the farmers, who will not see their own interest, join with the cattle-dealers and salesmen to prevent investigation. So they would if we get 'rinderpest,' as we shall certainly do if no effectual system of quarantine is adopted. It is only the vigilance of the Austrians and Prussians that has so long saved us; let our people only trade direct with the Russian ports of the Baltic, and the 'steppe disease' is sure to be brought to our shores. Send me all the information you can as to infectious diseases."

I trust you will all think with me that it is only just to Professor Gamgee to place on record such a letter, after what has unfortunately occurred. In fact, so far as I can ascertain, the first cargo of cattle imported direct from Russia has brought the dreaded pest to our shores; but whether the cargo brought by the "Tonnin" was the first or not, there can scarcely be a doubt in the mind of any man who has studied the disease that they were the means of bringing it into this country. I know there are those who believe in the "spontaneous origin" of this disease in the London cow-sheds, and that it is produced by bad sanitary arrangements, bad feeding, ill-ventilated byres, and the excessive heat and long continuance of dry weather; and some add, "that there is something in the air," or "something out of the air," which, coupled with the above-mentioned causes, produce the disease. This is a very pretty theory, and at first sight tangible enough, if you put out of sight the specific characters of the disease, especially when they add the "somethings" in, or "somethings out of the air," which so severely affect the bovine race, but which they know neither they themselves nor we can either prove or disprove. I look upon the spontaneous origin theory as opposed to all that we know of the disease and the laws that govern specific diseases. If bad sanitary arrangements, bad fodder, and long-continued excessive heat could produce this disease, how is it that we have not had it spontaneously generated in the

cow-sheds of London before now? Nearly sixteen years ago I spent eighteen hours a day in many of the London cow-sheds, investigating the "lung disease." I have seen them again this year, and unquestionably they are better kept, better ventilated, and the animals better fed than in 1849 and 1850. Then comes the long-continued heat, as the *Times* and a dozen of its correspondents point out, but they must surely forget that the disease was seen in London in the early part of June. Where was the long-continued and excessive heat before that period? Certainly not in London; for although we had mild genial weather in April and May, there was no excessive heat; we may conclude, therefore, that the opinion of those who hold to the "spontaneous origin" of the disease in the London byres has no foundation whatever. Indeed, the causes they look to as producing the disease are very much stronger proof against than in favour of their theory, because all these supposed causes have existed in a more aggravated form for the last century, and failed to produce the disease in a single instance. I do not undervalue the importance of cleanliness, pure air and water, and a free use of disinfecting agents, with a plentiful supply of good food, for man and the lower animals in the prevention of disease; they are all-important in the prevention of many, and in the cure of all, but let us not fall into the error of believing that because they are so essential to the preservation of a healthy body that a partial absence of them will produce specific diseases, such as rinderpest, cholera, or smallpox; if such did happen, we should never be clear of these diseases. Filthy and ill-ventilated houses, badly drained and badly ventilated byres, unquestionably predispose both man and animals to contract a disease when it exists; but they cannot produce "rinderpest," and it is extremely important to enforce this great truth, as upon it must be founded all curative or rather preventive measures that will banish the disease from our herds. Had our Government believed in this at the first, as they will do when half our oxen are gone, we should have had such energetic measures adopted as would have "stamped out" the rinderpest long ere this.

I will now direct your attention to the other side of the question; and here we shall find all that we know of the disease, as seen in our own country and in all others, to coincide with the idea of its being an exotic disease, spreading in this country by contagion alone. The proofs are so strong that I think it amounts to a positive certainty. First, then, there is a disease always present amongst the herds of oxen in the steppes of Siberia, which presents well-defined and characteristic symptoms, never met with in any other disease affecting the bovine species. Further, a disease resembling in every particular the one always present in Russia has for hundreds of years found its way into countries adjacent at different periods; but never into those countries not connected by land, or that did not import cattle, or parts of cattle, from countries where the disease existed—America, Australia, England, Ireland, Iceland, &c. In none of these countries has a disease existed at any time amongst

the ox tribe at all resembling the one now raging in our own land, with one exception, that of our own country in 1745, which case is strong evidence in support of the importation theory, because it has been most satisfactorily proved by Dr. Layard, who wrote upon it at the time, that the disease was imported into this country by means of a parcel of diseased hides which had been purchased by a tanner at a very cheap rate in Denmark, where they had been forbidden to be sold. If a country for a hundred years or more entirely escape this fatal malady, which is separated by wide seas from the home of the pest, and all adjacent countries are subject to it, what stronger negative evidence could we get that the disease is always imported into our land? Again, when we know, as we do upon the best authority, that the disease can only be kept from decimating the herds of Austria, Prussia, France, Italy, and other states of southern Enrope, by the most energetic measures which can be directed by the despotic governments of these countries—that these measures do arrest it, do prevent its spreading from country to country in times of *peace*, but do not in times of war, when all orders are null and void in the track of large armies, and when large numbers of oxen are brought from all parts to, and marched about with, the troops—then I should say that such evidence amounts to positive proof against the "spontaneous origin." Neither do I believe that it is produced by any altered condition of the atmosphere, except so far as the conveying of the poisonous germ of the disease from one animal to another.

The whole history of the various outbreaks in this country fully proves this theory, for nineteen out of every twenty cases can be traced to direct contagion. Let us take as an illustration the outbreak at Hartlepool. It has been clearly proved that the disease was conveyed to Rotterdam by oxen taken from London, which had the disease when landed; further, that these returned oxen were driven from Rotterdam to some marshes near Skeidam, some fifteen miles, and that they propagated the disease to several homesteads where they were taken. The Hollanders, like ourselves, not being acquainted with the disease, did not take any active measures until too late, there being numbers of centres from which the poisonous germs of this deadly malady were constantly emanating, until a very large portion of the whole country became affected. From this plague spot Mr. Spence brought to Hartlepool twenty-three animals, ten of which were sold to Mr. Carter; two of these died of the disease seven days after landing; the remaining thirteen were driven some five miles to Dalton Percy, where several died. At this juncture Mr. Peel was appointed inspector, and of course prevented any of the diseased animals from being removed off the premises. In fact, these animals were isolated, and every means taken to prevent any excreta from reaching the surrounding herds; the result is the escape of hundreds of animals in the neighbourhood. Is it reasonable to suppose this would have been the case if this disease could be generated by "something in, or something wanting in, the air"? In the case of Hartlepool the disease has been confined to those

animals absolutely in contact with the diseased ones, all of which were in adjoining fields. One man, when advised to remove a valuable herd of fine short-horn cows, refused to do so, because they would lose his luxuriant grass, which they so much required; the result of his ignorance and fool-hardiness was the loss of the whole herd. If we draw a line from the sea on the east, to the sea on the south-west, it would form the base of a triangle including Mowbray's and Thompson's farms, the town being the apex. In no part of this line would the distance be more than a mile from the spot where the disease first broke out, yet outside of this line no case has yet been seen, notwithstanding that the disease has been raging in its most virulent form for more than two months; and however assiduous in his duties our friend Mr. Peel may have been, I apprehend he would not have been able to confine this malady in so narrow a compass if it was produced by atmospheric causes, especially as there were hundreds of cattle constantly grazing in the open fields within three miles of the spot, and they are still free from the disease.

The geographical position of Hartlepool and the mode of farming in the immediate neighbourhood appear to me to have such a direct and important bearing upon the "modus operandi" of the spreading of the "cattle plague," that I think it necessary at the expense of being tedious to enter into a fuller explanation; and I do so without apology as it is all important to ascertain whether this disease can be communicated other than by contact with the poisonous germ derived from another animal. Dr. Siefmann, of Warsaw; Röll, of St. Petersburg; Furstenberg, of Eldena; Bouley and the late Professor Renault, of France; Drs. Budd and Lancaster, and Professors Simonds and Gamgee, of our own country, all men who have investigated this disease for years, tell us that although it is the most contagious malady known, yet it cannot be produced by any other means; in which opinion I firmly believe, and which has been remarkably illustrated in the outbreak on Carter's farm at Hartlepool. They also tell us that the virus is principally centred in the discharges from the eyes, nose and mouth, and also in the alvine discharges; and further, that all animals—men, horses, sheep, dogs, foxes and hares—are liable to convey the disease from an infected spot to a healthy herd, although not subject to contract the disease in their own systems, except sheep, which animal belongs to the same class as the ox—Ruminantia.

I may here state that Dr. Furstenberg told me, when at Hartlepool, early in September, that sheep were subject to this disease, although attacked in a milder form than oxen, the average loss being about 10 per cent. He also added that sheep and wild animals were a prolific source of spreading the contagion, by carrying the excreta of diseased animals upon the wool, hair, or feet. At Hartlepool, then, in a very marked degree, the means of propagating the disease are wanting. The sea forms two sides of the triangle in which Carter's farm and the whole of the cow-sheds are situated, all being close to the sea-coast, except Mr. Mowbray's

and Thompson's, and their cattle were in fields adjoining that in which Mr. Carter's were grazing. Again, there are no sheep, foxes, hares, or rabbits, kept in this neighbourhood, consequently no dogs to roam from field to field carrying the excreta of the plague-stricken oxen with them. Thirdly, there is no livestock market in the town, therefore all sheep and oxen coming into the place, seldom or never go out alive, as they are either consumed as food or kept for milking purposes. Fourthly, the vigilance of the inspector would prohibit any of the diseased herds from leaving the several byres or fields in which they were attacked, except for the purpose of being slaughtered. The result is exactly what would be expected if the statements of Dr. Budd, Simonds, and Gamgee are true—that by contagion alone is this frightful pest propagated. In no other part of England was there a more favorable spot to test the truth of the two theories, and the result has been positive proof in favour of the theory of contagion. I was so much impressed with a letter in the *Times*, of September 21st, bearing directly on this subject, that I feel bound to give the essence of it in this paper. The writer is M. Clement, a Belgian veterinary surgeon, residing at Palin, in Hungary. M. Clement, hearing of the outbreak in Belgium, wrote to his friends as follows:—"At this period last year the cattle plague prevailed in several communes adjacent to the estate of Palin, comprising a territory of several square leagues. In the centre of this infected territory was the Palin estate, on which were upwards of 800 head of horned cattle, notwithstanding which, by strict vigilance, drawing a cordon round the estate, and thus absolutely isolating it from the infected herds of the neighbourhood, we are perfectly safe, not having lost a single head whilst, in all the communes they were dying in large numbers. In that district alone 500 died, and in the whole of Hungary 180,000 beasts were carried off in three years, and the Palin estate was not the only one which enjoyed perfect immunity from the disease in an infected commune," thereby proving that contagion *alone* will produce this disease. If atmospheric causes could produce it, how is it possible that a number of cattle like those on the Palin farms, surrounded on all sides by animals suffering from the pest, could escape by means of a cordon being drawn around it, as we know they did? Nor was this an exceptional case, for we are informed in the letter that several other large estates were kept perfectly free by the same means.

In bringing before you the symptoms and post-mortem appearances, I shall be as brief as possible, as so much has been written and said upon them that they are doubtless familiar to all of you. It can be only in the very early stages of the disease that a person acquainted with the malady can be wrong in his diagnosis. After the first stage of the disease there is such a peculiar dejected expression of countenance, seen in no other disease affecting the ox, that you cannot well mistake the nature of the malady. On the other hand, it is extremely difficult to tell twenty-four hours before the disease is thoroughly developed that any disease is existing in

the body; certainly not by auscultation, nor by the frequency or character of the breathing or the heart's action. The very earliest symptom I have been able to detect is the increased heat of the mouth and the vagina; quickly following this is the pinky redness of the lining membrane of the mouth, and a streaky aphthous appearance of the vagina, followed by exudations of lymph-flocculi on the membrane of the latter and small vesicles on the membrane of the former, the epithelium of which rapidly desquamates, leaving many excoriations or sores of various sizes, some of which on the inner part of the lower lip soon end in deep ulcers. But ere this stage of the disease is reached the animal becomes dull and presents the dejected appearances before mentioned; the hair has lost its glossy character, and stands out; the ears drop, and a watery discharge flows from the eyes and nose; the membrane of the eyes becomes very red or bloodshot; the breathing quick and short, frequently reaching from 70 to 80 per minute; pulse small and quick, reaching 80 to 95 per minute; the bowels are generally constipated, but soon give way to excessive diarrhœa; the appetite and rumination are partially or entirely suspended, and in dairy cows the lacteal secretion is lost. At this stage of the disease there is frequent shivering, especially of the muscles of the quarters, flanks, and shoulders; a low weak cough is frequent, accompanied in many cases with a peculiar moan, such as we do not hear in any other disease.

As the malady progresses most of the symptoms above named become increased in severity; the excoriations and ulcers in the mouth become larger and deeper; viscid saliva flows from the lips; not infrequently an exudation of lymph is deposited upon the palate and fauces, varying from a slight film to an eighth of an inch in thickness; the discharge from the eyes and nostrils, which at first was a clear watery fluid, is now mixed with opaque flocculi of lymph, and becomes purulent in character; the breath is exceedingly fetid, and the alvine discharges are most offensive; the vagina and rectum are much congested, and a purulent discharge issues from both; great prostration is present from the first, and in the latter stages of the disease the animal staggers if made to walk; when lying, the head is generally brought round to the side. The cough is now much less frequent, but weaker; the breathing is also slower, in several cases I have seen it down to 15 per minute on the day of death; more especially has this been the case in the foreign stock. In some cases extensive emphysema takes place along the course of the spine; this symptom is, I believe, more frequently seen in dairy cows than in feeding or young stock; and when occurring the disease runs its course more rapidly than in those cases where it is not. The internal organs also give evidence of much greater ravages of the disease where there is much emphysematous condition of the areola tissue beneath the skin than where there is none. Towards the close the eyes are much sunken; the mucous membrane of a dark purple colour; the ears, horns, and legs deathly cold; the mouth a mass of putrid sores,

the effluvia from which is unbearable; the animal occasionally attempts to rise, but cannot, and generally in one of these efforts the last dying struggle takes place.

You must by no means suppose that all the symptoms I have described are invariably seen. In no disease I have ever treated have I seen the symptoms vary so much as in rinderpest. In some cases there is little or no discharge from either eyes or nostrils, in others the mouth is only slightly affected; in some there is almost constant grinding of the teeth, in others it is never heard, in some there is laboured breathing, and almost constant moaning, in others of the same breed and in the same byre neither the one or the other is seen or heard; therefore the absence of any particular symptom mentioned does not prove that the animal was not affected with the genuine form of "cattle plague."

There are a few symptoms, however, which, I believe, are never absent, and which I shall call diagnostic, viz., the hot, inflamed state of the vagina, with its peculiar odour; the hot, pinky coloured mouth; the offensive diarrhœa, and the dejected expression of the animal. Couple these with the contagious character of the malady, and we cannot, with ordinary precaution, err in our diagnosis.

From what I have stated of the symptoms during life you would naturally expect to find great variations in the *post-mortem* appearances; and such is the fact. In some the larynx, pharynx, and fauces are intensely inflamed, and the mucous membrane covered with a thick layer of lymph, not unlike the appearance of the human throat in diphtheria. In other cases these appearances are wanting. The lining membrane of the trachea and bronchi is, as a rule, only slightly affected, and then only with a few blood spots or streaks. The lungs in all cases present characteristic appearances, seen only in this disease. They are always emphysematous throughout, and extremely pallid, presenting the appearance of the lungs of a calf which has been bled to death and afterwards blown full of air by the butcher; but in no case have I seen the slightest structural disease or pulmonary congestion. The heart, pericardium, and pleura present no sign of disease further than an unusual pallidness; not so, however, the viscera of the abdomen, especially the fourth stomach and intestinal canal. In these organs we frequently meet with extensive structural changes, the extent of which appears to depend upon the length of time the disease has existed before the *post-mortem* examination takes place. Thus, in some cases you meet with very slight congestion or inflammation of the mucous membranes of the stomach and intestines, even when the animal has died from the disease. In such cases beneath the epithelial membrane we meet with thickened opaque spots, dense in structure, generally of an oval form, and varying in size from a pea to a sixpence; but where this occurs the mouth, tongue, fauces, and pharynx are generally affected to the extent mentioned above. In other cases the whole of the mucous membrane of the fourth stomach and the small and larger intestines is intensely congested, and the spaces between the folds of the fourth stomach and the depres-

sions on the lining membrane of the intestines are covered with a peculiar exudation. Ulceration of the posterior part of the fourth stomach is frequently seen, and always most marked near the pyloris. This ulceration is less marked in the intestines, but excoriations are common, leaving the part denuded of its epithelial covering. The first and second stomachs are mostly healthy; the third occasionally presents a diseased appearance, and often to a slight extent only; a few circular congested spots on the leaves is frequently all that is seen; neither is the food between the folds in a more than usual dried condition, as has been frequently stated. The veins of the mesentery are generally engorged with blood to a much greater extent than in most other diseases; the liver, kidneys, spleen, bladder, and uterus present no peculiar appearances, otherwise than is observed in many other exhaustive diseases, except that the gall-bladder, in all cases examined by me, was found greatly distended with bile. The vagina in every case presents characteristic appearances, being always very red, or in many cases of a dark purple colour; excoriations exist in its epithelial coat, covered with a muco-purulent discharge.

The next and last division of my subject is one that has produced the greatest diversity of opinion, viz., the treatment of the disease, both amongst members of our own and also the medical profession, one side recommending treatment of all cases because some may be saved; the other advising the "pole-axe and the knife" as the safest and best means of eradicating the disease. I acknowledge that it is humiliating to confess ourselves unable to successfully combat this disease, and, looking at it only from a scientific point of view, it does seem a most barbarous and unscientific mode of proceeding, alike derogatory to the veterinary and medical professions. I purposely include the latter profession, as they have always taken an active part in the discussion of the subject and also in the treatment of the disease in every country in Europe where it has broken out. And the medical profession in our own country, I am thankful to say, is no exception to the general rule; but unfortunately nearly the whole of the medical men in this country argue the question on precisely the same grounds as they would a similar fatal disease attacking the human subject (or even the horse, which in this country is not an article of food); whereas nothing can be more fallacious, there being no analogy in the two cases. In the case of cattle it is entirely a question of money. Can you cure the disease *to pay?* is the all-important question to the owner. If you cannot, better not treat it at all. This is not the case with the human subject. If only one in a hundred recovered, the medical man would still be justified in using such remedies as his skill and judgment dictated. Supposing the disease attacked horses as it now does oxen, and the average recoveries amounted to 10 or 20 per cent. only, we should still be justified in persevering in the treatment of the malady, because the horse when dead would be of no value comparatively; not so, however, with the ox or cow. At least half the animals slaughtered are

worth three fourths their net value in the market when alive and well; and when we remember that in all the bovine tribe, even if only half fat, it will not pay to treat a disease of a severe form unless you can save at least 80 per cent. of your cases, and this too in diseases not infectious, because it is found that the expense of treatment and attendance, with the certain deterioration of the animal by loss of flesh, and the risk of losing 20 per cent. is a remedy, more expensive than the loss occasioned by sending the half-fat animal into the dead meat market when first attacked, and fit for food. If this is the case with ordinary diseases in the ox tribe, how much stronger would the rule apply to the most contagious and infectious disease known in the animal kingdom, the fatality of which in every country hitherto attacked, out of Siberia, has never been less than 80 per cent., and in our own country, up to this time, the fatal cases have been 95 per cent.? Yet you hear and read on all sides of *prodigies* who can cure this malady—persons who have the assurance to advertise themselves, by letter, in the public papers, that "if called in they can cure some." But will curing *some* pay the owner? I will give you one example out of many. A veterinary surgeon in Newcastle, of "thirty-five years' experience," wrote to one of the daily papers of that town, stating his ability to cure the disease, and condemning the slaughtering practice adopted. Of course there were many poor people who had the whole of their property invested in their cows, amongst many others was Mr. ——, who had eleven beautiful cows in fine condition. Unfortunately for him the plague broke out in one, which was reported to the inspectors; they, seeing the admirable condition of the animals, recommended the poor fellow to kill, and send the ten into the dead-meat market, all of which were good and wholesome food. The man, being anxious to keep his cows, if possible, applied to the veterinary surgeon who had publicly stated his power to cure the malady. He commenced to treat them three weeks since, and here is the result—the first seven cases all died, three others were so hopelessly bad that the owner, in disgust, sent them to the manure yard, and one had not contracted the disease. Can we have anything more illustrative of the absurdity of such a proceeding? I hope, for the sake of our profession, it was nothing more. Here were nine fat cows, worth as food for the people not less than £20 each, causing £180 loss to the poor man, and not less that 585 stones of good beef to the public, besides the tenfold risk of spreading the disease to other animals. I could give you six other cases which have come under my own observation, where similar thoughtlessness has been practised, but the length of my paper will not permit it.

I confess I have been not a little surprised at the *M.D.s'* letters on this subject, especially those which appeared in the *Times;* and that very eminent man, Dr. Letheby, has surprised me more than all. His statement before the Lords of the Council is about the most shallow reasoning I ever remember to have read. He says, "What would have been the result if in cases of typhus or typhoid

fever in the human subject, the practice had been adopted of not treating it at all? They, by treating these diseases in hospitals, could cure 80 per cent.; therefore he came to the conclusion that it was a barbarous, unscientific, and cruel thing to send the infected animals to be slaughtered without attempting to cure them." Surely Dr. Letheby must be able to see the difference between the life of a man and the life of an ox. The life of the former cannot be valued in money, while that of the latter can be stated to a shilling. The life of a man is so immeasurably valuable that it is difficult to say what risks should not be run to save it; the value of the life of an ox is so exactly known that it is not at all difficult to say what risk should *not* be run to preserve it. If by allowing one ox to live there is a reasonable probability that two others will die, it is clear that it would be the height of folly to prolong the existence of the first for an hour. In the next place, rinderpest at present is far more contagious, infections, and fatal in this country than either typhus or typhoid fever in man was ever known to be, by more than 50 per cent., which is probably due to the fact that it is impossible to nurse cows, even in the best-regulated cow-sheds, as we can men in hospitals; if we could, the possibility is that a large per-centage might be saved, for, in truth, the treatment of our best physicians in all fevers may be summed up in two words—good nursing. How would the doctor nurse eighty to one hundred cattle in an open field, or a dozen in a wretchedly dirty cow-byre, in which more than one half of them are? Again, see the immense difference between the alvine and other secretions and excretions of the ox and those of man; and as they are supposed to be the principal means of conveying the disease, the bovine animal must be a much more formidable engine than the human for the spread of a contagious or infections disease. Yet again, disinfection can be practised almost to perfection in the case of an animal who is clothed and bedded as man is; but even in the best-arranged cow-sheds, or in the open field, this can be done only to a small extent. Every day that a diseased animal lives there is the certainty of its giving off particles of pus, of germinal matter, or of animal poison, which may infect fifty others; and when we know the innate carelessness of those persons who attend upon our cattle we could not even trust the adoption of Dr. Thudicum's elaborate code for disinfecting one out of ten of our cow-houses. In proof of this I may just mention that when I was in Newcastle I saw four carts belonging to farmers a few miles out of town loading manure from an infected byre, to take it undisinfected to their own farms; and one farmer had given his man instructions to put the "entrails" of the diseased animal which had been killed, into the bottom of the cart, so that the inspector should not see them. And further, these four carts had to pass along the main road to the moor where, in the course of an hour or so, some hundreds of cows would have to pass to their pasture. The wonder to me is, not that the disease is spreading, but that there is a byre in the town free from the malady. My own impression is that, until far more stringent measures are

adopted by the Government, the disease will continue to spread. Further, what would practical men think if their patients suffering from cholera, smallpox, typhus fever, and other contagious diseases, were compelled to attend public places of resort, travel in cabs, omnibuses, railway-carriages, mixing with thousands of others not suffering from the other disease; how would they expect to arrest the spread of such maladies? I presume it would be quite impossible; but if we attempt to treat the cattle plague, generally, in spite of all such regulations as are now carried out, our patients with rinderpest will be compelled to similar acts by hundreds of men who are the owners of cattle.

I was much pleased to see the report of the Minister of the Interior to the King of Belgium, stating that "rinderpest" no longer existed in any part of that kingdom (published in the *Times* of the 14th inst), the more so because when Dr. Faustenberg, the Russian Commissioner, was staying with me, he received an account of the outbreak of "cattle plague" in Belgium, carried there by a cow bought at the market of Enaena, in Holland, on the 11th of August. This animal was taken to Uccle, near Brussels, and placed with a herd of nine others; on the 20th she showed symptoms of rinderpest, and was destroyed with the other nine. Two days afterwards the disease broke out at Marke Kerkeham, in East Flanders, where a herd of seven were killed. Here, as at Uccle, the disease was traced to one of a herd of cattle bought in Holland. Thus the disease continued to spread from place to place, when the most stringent measures were enforced, and in two months not a case was known to exist in the whole country. I mention this instance because Dr. Faustenberg so especially drew my attention to it, stating, "You will see that the Belgians will 'stamp out' this disease in their country in a few weeks; while you with your, half-and-half measures, and differing with each other as to whether it shall be treated or not, will lose more than the half of your noble head of cattle, and then will have to adopt the same means as we do, before you can eradicate the plague from Britain." I should think there is no country in Europe so like our own in agriculture and manufactures as Belgium; but while they act upon the experience of other men and drive this malignant disease out of their country in eight weeks, we refuse to be guided by the opinions and experience of a number of men from every country in Europe, "every man doing as he thinks right in his own eyes;" and, from bigotry on the one hand, and self-interest on the other, spreading the disease to every part of the land. Why we Englishmen, who have never seen the disease before, should refuse to receive the unanimous opinions (founded on years of experience) of the French, Austrians, Prussians, and Russians, I cannot understand, except that our countrymen will not be dictated to; they would sooner pay ten times the amount to have anything done their own way than follow in the footsteps of foreigners. In the same letter from which I quoted respecting the Palin estates is given the measures taken in Hungary last year, after they had lost 180,000 head of

cattle. M. Clement says, "Absolute isolation of infected or suspected cattle is the only remedy against the propagation of the evil. It is that which we have employed here, and it has saved us perfectly. Since July, 1864, when the disease was first noticed, up to the end of March last, when it had completely ceased, the infected or suspected communes have been surrounded by a sanitary cordon; reliable persons watched day and night to prevent all entrance or exit of cattle; the landholders took every care to prevent their people from visiting infected places; the carcases of the slaughtered or fallen beasts were buried five feet deep, to prevent dogs or foxes from getting any part of the offal, and even the dogs in many places were sacrificed to avoid all chance of their transmitting the contagion; lastly, all fairs and cattle markets throughout the country were suspended until May, 1865." Thus we see that in Hungary, where the plague had extended to an enormous extent, it was entirely eradicated in a few months by the same means so strongly urged upon our Government by Professor Simonds in July last, but in vain. "As one swallow does not make a summer," so we have two, for the kingdom of Belgium, as we have already stated, was delivered from this fearful pest in two months by adopting precisely the same means as Hungary did. Why should it not answer the same with us? As, however, our countrymen will not submit to these stringent measures, they must take the consequences. We, as a profession, have urged them strongly and persistently. I believe I may state that nine out of ten amongst us have been of one opinion, and for expressing it freely we have met with not a little abuse. "Ignorant animals" is only one of the polite epithets applied to us; but if we are ignorant we are honest, and I am proud to see nine-tenths of the veterinary profession advocating with all their might a procedure which they believe to be for the best interests of their country, but diametrically opposed to their own pecuniary benefit.

But we should remember that all epizootic diseases, as well as epidemic, invariably assume a milder form as they progress, and therefore we may hope that "rinderpest" will be no exception to the general rule. Whether it is that the disease becomes less virulent, or that at the first outbreak all the weaker constitutions of the race are swept away, or that better sanitary measures are adopted, I will not stay to discuss. Cholera in the human subject, influenza-fever in the horse, lung disease and the foot and mouth disease in the ox and sheep, are familiar illustrations of this fact. If we are to treat this disease, it should only be in those cases of lean stock which are not fit for the butcher, and in these good nursing will be of the first importance; clothing the surface of the body, pure air, excessive cleanliness and disinfecting the excreta, food given in small quantities, and frequent draughts of infusion of linseed and hay, peas, mixed with good gruel, &c. Mild diuretics and diffusible stimulants should also be administered. Amongst the latter class I have found carbonate of ammonia and Spt. Æther. Nit. to hold the first place in all diseases of a low

type. And where the life of the animal is of more importance than the expense of treatment, good sherry, in half-pint doses, is invaluable. But I protest against what is called "bold practice," viz., giving a pint and a half of brandy or whiskey at a dose, for in ninety cases out of a hundred it would do harm instead of good. Whatever mode of treatment each may adopt, it is the duty of every man in the profession to note accurately the symptoms and the effects of the medicaments employed in each case, so that some irrefutable opinion may be arrived at. This is the main object of such societies as I have now the pleasure to address, for where numbers of men are treating a disease or diseases of the same type, but under different circumstances and conditions as to climate, &c., it is necessary they should compare their notes and experience, and arrive at more satisfactory data than would be possible for a single individual, however intelligent, perseerving, and skilful he may be.

I might add much more, but by doing so I should only be occupying your valuable time which will be much more profitably employed in discussing the nature of this important disease.

The President, in commenting on Mr. Hunting's paper, said it was one of great excellence, and showed deep search in its composition. The author had not only brought his own experience to bear on the subject, but had borrowed largely from the experience of others who had studied the disease abroad; he begged, therefore, to propose a vote of thanks to Mr. Hunting for his very excellent paper.

Mr. Stephenson, of Newcastle, said he had great pleasure in seconding the motion, and could only add his testimony to Mr. Wilkinson's as to the great value of Mr. Hunting's paper.

Mr. Hunting briefly returned thanks.

The President said the subject was one of so much importance to the country, and the paper so much to the point, that he thought it could not be too widely disseminated; he therefore begged to propose that Mr. Hunting's permission be obtained to allow it to be sent to the veterinary journals.

Mr. Allison, of Thornley, wished to know what was the average length of the period of incubation.

Mr. Hunting said it had been variously stated from five to twenty-one days; he thought from seven to ten might be the average, but the International Congress held at Vienna this year had deemed it safe to advise a fourteen days' quarantine.

Messrs. Wilkinson and *Stephenson* said the longest period that had come under their notice in Newcastle had been twelve days, thus proving that the quarantine adopted by the International Congress was no longer than safety dictated.

Mr. Farrow, of Durham, wished to know if any medicine had been given as a preventive? Turpentine and creosote had been resorted to as preventives in the lung disease in cattle, and with general success.

Mr. Hunting drew the attention of the meeting to the extreme difficulty of diagnosing rinderpest in the very early stages. In proof of this he mentioned two or three cases of disease that had occurred in his own practice, where for the first twenty-four hours the symptoms were identical with those of rinderpest in the early stage. He had no doubt in his own mind that numbers of animals were destroyed for rinderpest when no such disease really existed.

Mr. Dudgeon, of Sunderland, said he believed that the peculiar eruption, with reddened state of the vagina, was never seen in any other disease, and it never was wanting in rinderpest.

Mr. Hutchinson, the Secretary, said he had met with four cases in which the lungs were affected, as in pleuro-pneumonia, and that the first, third, and fourth stomach presented the ordinary appearances of rinderpest, and in the third stomach perforations of various sizes were present, with patches of a deep purple colour.

The President remarked that, though they had ample proof of the contagious nature of rinderpest, yet it seemed to him to be very slightly infectious, the length of a street, or half a street, being quite sufficient to protect animals. He also complained of the great difficulty they, as inspectors, experienced in getting cow-keepers to use disinfectants before the disease came to their byres, though they were ready enough to do so afterwards, when they were of much less value.

Mr. Stephenson said, though they would not use disinfectants, they were ready enough to employ their own nostrums. He had visited several byres in which a string of onions was suspended round the neck of each cow as a preventive of the plague.

Mr. Hunting drew attention to the vast importance of microscopical examination of the fluids of the body in a disease like this, and if medical men had but the care of our patients this would have been done long ago.

Some desultory conversation followed, in which most present took part, principally in regard to Dr. Smart's apparently successful treatment in Edinburgh, but which has since been denied in the *Scotsman*.

The President then proposed that the discussion be continued at the next meeting, as the paper contained so much important matter it was impossible to do it justice in one day. This, however, was overruled, as at the next meeting the President gives his inaugural address, and the annual dinner likewise takes place, which was thought to be as much work as could be well accomplished.

A vote of thanks to the Chairman terminated the proceedings.

JOHN HUTCHINSON,
Hon. Secretary.

SOUTH SHIELDS; *November* 14*th*, 1865.

LIST OF MEMBERS OF THE ROYAL COLLEGE OF VETERINARY SURGEONS APPOINTED AS GOVERNMENT INSPECTORS, FOR THE SUPPRESSION OF THE CATTLE PLAGUE.

We have endeavoured to make the following list as complete as possible, and any omission will be corrected in our next. The districts belonging to each inspector are not indicated, as they are of necessity subject to alterations, and for the further reason that many country inspectors have neglected to furnish us with the necessary information.

ENGLAND.

Bedfordshire.

Cornelius, John E., Luton

Berkshire.

Flanagan, W. G., Reading
Gadsden, John Wesley, Bracknell
Wheatley, W. A., Reading

Buckinghamshire.

Bennett, John, Stoney Stratford
Bond, Edward, Buckingham
Crowhurst, Eusebius G., Amersham
Lepper, Henry, Aylesbury
Lepper, George Henry, ditto
Meekes, James, Great Marlow
Powell, John, Newport Pagnell
Powell, William, Newton Longville
Williamson, Christopher, Beaconsfield

Cambridgeshire.

Brook, Thomas, Fyfield
Knowles, Robert, Wisbeach
Wallis, Page, Cambridge

Cheshire.

Darwell, George Henry, Knutsford
Greaves, John, Altringham
Taylor, John Boardman, Hyde

Cornwall.

Hire, Edward, Penzance

Cumberland.

Bell, J., Carlisle
Carlisle, Joseph, Carlisle
Thompson, Henry, Aspatria
Reynolds, Richard L., Alfreton

Derbyshire.

Leech, Thomas M., Bakewell
Martin, Francis Else, Chesterfield
Platts, Robert, Chesterfield
Poyser, George, Ashbourne
Reynolds, R. S., Alfreton

Devonshire.

Austin, Thomas, Honiton
Collings, John J., Plymouth
Dyer, Richard H., Torquay
Ferris, Henry, Dittisham
Heath, James P., Exeter

Dorsetshire.

Banister, Albert E., Bridport
Redwood, Joseph, Dorchester

Durham.

Allison, William, Thornley
Dudgeon, David, Sunderland
Hall, Robert, Stockton-on-Tees
Hunting, Charles, South Hetton
Moore, William S., Gateshead
Peele, Henry, West Hartlepool
Plews, Thomas, Stocton
Thompson, Thomas, Sunderland

Essex.

Hazell, John J., Great Bromley
Helmore, William, Stratford
Hutton, Robert R., Great Yeldham
Lawrence, Henry Stewards, Romford
Norris, Joseph, Colchester
Seaman, Isaac, Saffron Walden
Shave, Edward S., Chelmsford
Skelton, Richard, jun., Leyton
Tayler, Rowland, Colchester

ESSEX (*contined*).

Taylor, James, Wick
Young, John, Braintree
Wallis, William S., Halstead
Webb, Henry, New Stampford

GLOUCESTERSHIRE.

Barling, Fredcrick Wm., Newnham
Hobbs, Henry, Newnham
Murray, A. J., Royal Agricultural College, Cirencester
Paradise, John, Dursley
Thomas, Richard W., Tewkesbury
Vick, John, Gloucester

HAMPSHIRE.

Barford, John Davis, Southampton
Burden, William, ditto
Colebrook, Charles, Basingstoke
Crafts, Howell W., Fareham
Gould, George James, Southampton
Green, William Smith, Alton
Gregory, J. G., Portsmouth
Redford, Thomas, Winchester

HEREFORDSHIRE.

Barling, J. W., Ross
Hill, John Roberts, Leominster
Jones, F. B., Hereford
Proctor, Harrison, Hertford
Wilson, William, Berkhampstead
Webb, Thomas G., Bishop's Stortford

HUNTINGDONSHIRE.

Dickens, Charles, Kimbolton
Fordham, Thomas B., Godmanchester
Garner, Brand, St. Ives

ISLE OF WIGHT.

Wheeler, Edwin, Rookley

KENT.

Ashton, John, Sevenoaks
Bentley, William, Margate
Boulter, Frederick C., Woolwich
Bulmer, W. H., Dover
Constant, Arthur Edw., Ramsgate
Cowie, James, Bromley
Crowhurst, Charles, Maidstone
Crowhurst, James, Canterbury
Fordham, George, Willesborough
Gregory, Thomas, Tunbridge
Hogben, Henry, East End Hill, Hythe

KENT (*continued*).

Ingersoll, Frederick Richard, Lewisham
Martin, John Bean, Rochester
Morgan, Charles, Nonnington, Wingham
Plomley, John Croft, Maidstone
Poulton, F. J., Gravesend
Shaw, Henry K., Sydenham
Worsley, James, Tunbridge Wells

LANCASHIRE.

Bridge, Roger, Bury
Buckley, Samuel L., Blackburn
Challenor, W. I., Worsley, Manchester
Ellis, John, Liverpool
Ellis, Peter, ditto
Heaps, William, Preston
Howell, James, Middleton
Hutchinson, —, Great Eccleston
Kirkman, James, Accrington
Lawson, Alexander, Bolton
Lawson, John, Manchester
Lawson, John, jun., ditto
Lawton, Enoch, Ashton-under-Lyne
Lowe, James, Leigh
Polding, P. Oswald, Bury
Smith, John, Ormskirk
Tayler, W., Manchester
Taylor, James, Oldham
Taylor, Thomas, Manchester
Twist, Charles, Woolton

LEICESTERSHIRE.

Bailey, Edward, jun., Leicester
Goude, John M., Hinckley

LINCOLNSHIRE.

Batchelder, John, Grantham
Bland, William James, Boston
Clarke, Thomas Allen, Bull Ring, Horncastle.
Cutting, Henry, Market-Raisen
McHugh, John T., Brigg
Sharman, Thomas B., Old Leake

MIDDLESEX.

Boughton, Thomas Peter, Hounslow
Broad, James C., Praed Street, Paddington
Brown, Geo. T., White Horse Yard, New Cavendish Street
Dale, William, Stanmore
Farrow, William, Commercial Street, Whitechapel

MIDDLESEX (*continued*).

Giltro, William, Hampstead
Hancock, Henry Michael, Uxbridge
Hirst, Charles Samuel, Barnet
Moss, F. W., Earl Street, Blackfriars
Priestman, Henry, Caledonian Road
Shirley, William, Twickenham
Simmonds, William, High Street, Poplar
Tegg, George, jun., Stamford Hill
Woodger, Joseph, jun., Bishop's Mews, Paddington

MONMOUTHSHIRE.

Lewis, George, Monmouth

NORFOLK.

Baldwin, George Thomas, Fakenham
Beart, Walter James, Lynn
Buckingham, H., Harleston.
Carter, Charles N., Swffham
Chambers, Wm., Docking
Crabbe, William C., Earsham
Cross, George Thomas, King's Lynn
Denny, Joshua, Roughton
Ellis, William, Hempnall
Hammond, John, Bale, Thetford
King, Edward James, Diss
Overed, John Davey, Blofield
Plumbley, George H., Southrepps
Rattee, Daniel Elmer, Fundenhall
Riches, John Worship, Acle
Shipley, William, North Walsham
Shipley, William, Great Yarmouth
Smith, William, Norwich
Whitwell, Richard, Norwich
Worm, James, Watton
Wright, James, Burnham Overy

NORTHAMPTONSHIRE.

Bramford, Wm. Catton, Oundle.
Garratt, Samuel S., Northampton
Mackinder, Richard, Peterborough
Merrick, Thos. James, Northampton
Rawlings, C. W., Peterborough

NORTHUMBERLAND.

Aitken, Robert, Felton
Allison, H. Watson, Long Benton
Stephenson, Clement, Newcastle-on-Tyne

NOTTINGHAMSHIRE.

Cave, Thomas, Nottingham
Pyatt, Henry, Nottingham
Reynolds, Richard, Mansfield

OXFORDSHIRE.

Mellett, Edward, Henley-on-Thames
Page, Charles N., Banbury

SHROPSHIRE.

Cartwright, William A., Whitchurch
Copeland, Lawrence, Shiffnal
Dayus, Charles, Longor
Jones, James B., Ludlow
Leigh, Nathaniel, Bristol
Litt, William, Shrewsbury
Payne, Colin V., Market Drayton

SOMERSETSHIRE.

Barrell, Thomas, Keynsham
Bovett, Edwin James, Bridgewater
Broad, Thomas Dike, Bath
Cade, Thomas, Bristol
Gibbs, Joseph, Taunton
Leigh, Nathaniel, Bristol

STAFFORDSHIRE.

Carless, John, Stafford
Carless, William, ditto
Checkett, Benjamin, Wolverhampton
Llewellyn, W. H., Newcastle-under-Lyne
Pritchard, Harry D., Wolverhamton
Robinson, William, Tamworth
Walters, Robert G., Stone

SUFFOLK.

Coe, Walter, Bury St. Edmunds
Fenner, William Lyle, Clare
Girling, Robert, Ipswich
Grimmer, Charles, Bungay
Harvey, Stephen S., Lowestoft
Hutton, Josiah, Sudbury
Newson, Henry, Beccles
Petley, Edward, Barrow, near Bury St. Edmunds
Shorten, Charles T., Ipswich
Taylor, Edwin, Bury St. Edmunds
Thurston, Walter, Fressingfield

SURREY.

Boden, Hesman, Upper Russell Street, Bermondsey
Cross, William Francis, Battersea
Donaldson, George Evans, Epsom
Eversheld, Stephen, Godalming
Ernes, and Lowe, William, Dockhead, Bermondsey.
Forbes, Matthew B., Reigate
Legge, Henry Charman, Dorking

SURREY (*continued*).

Lupton, Jas. Irvine, Richmond
M'Cutchan, John, Farnham
Stanley, Frederick Thos., Borough

SUSSEX.

Crofts, Henry, Arundell
Crowhurst, James, Warbleton
Dawtrey, Jeffery, Chichester
Hopkins, James, Pulborough
Vine, Vincent, Lewes

WARWICKSHIRE.

Ison, William Charles, Atherstone
Proctor, Alfred B., Meriden
Watson, Walter, Rugby

WILTSHIRE.

Aubrey, Thomas, Salisbury
Bibby, James, Calne
Duck, James, Marlborough
Hussey, H., Devizes
Scott, William, Chippenham
Truckle, J. C., Salisbury
Vincent, Jesse O., Swindon

WORCESTERSHIRE.

Blakeway, Francis, Stourbridge
Boulton, Robert Tutnall, Bromsgrove

YORKSHIRE.

Anderton, John Wilkinson, Skipton-in-Craven
Anthony, Paul, Tickhill, near Doncaster
Barker, Charles, Malton
Bourdass, George, Bridlington
Broughton, William, Woodhouse, Leeds
Carter, Joseph S., Bradford
Cartledge, Benjamin, Sheffield
Collins, Thomas, ditto
Cooper, Job, Market Weighton, Brough
Cuthbert, John, Leeds
Dray, Edward C., ditto
Emmot, D. C., Keighley
Fryer, J., Kirby, Flectham
Horne, Thomas, Barnsley
Kay, John; Pontefract
Kirk, B. R., Settle
Mather, George I., Doncaster
Midgeley, William, Sheriff Hutton
Mitchell, John, Leeds
Secker, Thomas, Ripon

WALES.

Bodington, George, Cauton, Cardiff
Kennedy, Thomas, Wrexham

SCOTLAND.

ABERDEENSHIRE.

Snowball, Matthew C., Huntley

BERWICKSHIRE.

Hogarth, George, Berwick

FORFARSHIRE.

Lyon, William, Forfar
Taylor, Alexander, Brechin

LANARKSHIRE.

M'Call, James, Glasgow

LINLITHGOWSHIRE.

Borthwick, John, Kirkliston

PEEBLESHIRE.

Ferguson, Patrick, Peebles.

ROXBURGHSHIRE.

Robertson, William, Kelso

MISCELLANEA.

A NEW caustic has been invented by an Italian, which he declares is an effectual antidote against the virus of a mad dog. He has offered to inoculate himself with the virus as a crucial test of the efficacy of his invention.

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